# A Longitudinal Micro-Foundational Investigation into Ambidextrous Practices in an International Alliance Context - A Case of a Biopharma EMNE

# Abstract

This paper explores development of an ambidextrous context in a rapidly growing emerging market multinational (EMNE), thus unbundling cultural and structural complexities. We use the micro-foundational lens of ambidexterity to explore and identify different processes, structures and mechanisms that underpin the development of ambidextrous practices in the organisation. We adopt a longitudinal case study design to trace the evolution of the organisation, which during the initial phases of its existence focused on supplying industrial enzymes and refined its technical base. In subsequent years, it exploited its technical base to emerge as a full-fledged biopharmaceutical company and adopted strategic partnerships with international companies to explore new knowledge. Our novel and rich research context also provides us with insights on how this EMNE exploited its technological knowledge, whilst utilising strategic partnerships or alliances to simultaneously engage in exploratory activities. Through the micro-foundational lens of ambidexterity, we uncover the critical role played by its leadership in addressing paradoxical tensions for simultaneously managing exploitation and exploration in an international strategic alliance context.

# Introduction

From a theoretical and methodological point of view, when it comes to contextualizing explanation in international business, micro-foundational approaches are steadily gaining scholarly attention in the business strategy realm in general, and in the field of global strategy and IB in particular (Felin, Foss, Heimeriks, & Madsen, 2012; Felin, Foss, & Ployhart, 2015; Foss & Pederson, 2014). For instance, several studies have adopted a micro-foundational views, such as to explore knowledge transfer in multinational enterprises (MNEs) (Andersson, Gaur, Mudambi, & Persson, 2015), impact of owner CEOs in internationalization strategy (Chittoor, Aulakh, & Ray, 2017), CEO's origin in terms of his/her international background (Kunisch, Menz, & Cannella, 2019), MNEs transnational capabilities (Morris, Hammond, & Snell, 2014), innovation and entrepreneurship efforts in MNE subsidiaries (Nuruzzaman, Gaur, & Sambharya, 2017; O'Brien, Sharkey Scott, Andersson, Ambos, & Fu, 2017), risk and resilience of repatriates (Liu, 2018), how universities coordinate and motivate resources in their ecosystem for building sustainable regional innovation systems (Liu & Huang, 2018) as well as the human side of collaborative partnerships (Liu, Sarala, Xing, & Cooper, 2017). These micro‐foundational approaches constitutes significant, but nonetheless relatively recent emergent bodies of work, with each having developed particular predilections creating a fusion that unearths the drivers and antecedents that operate and play out in the dynamics between various research domains (Cooper, Stokes, Liu, & Tarba, 2017).

While the current research stream on micro-foundations predominantly focuses on single organisations, the role of micro-foundations in the context of inter-organisational relationships - such as in cross-border strategic partnerships and their relationship to organisational performance - remains partial and relatively under-investigated (Angwin, Paroutis, & Connell, 2015; Mäkelä, Andersson, & Seppälä, 2012; Park & Harris, 2014; Paruchuri & Eisenman, 2012). As emphasized by Liu, Sarala, Xing, and Cooper (2017), the extant research on collaborative partnerships has, over a period of time, accumulated into a vast body of knowledge, which helps to better understand these rather complex organisational phenomena, which include mergers and acquisitions, strategic partnerships, and joint ventures. However, existing studies have not paid sufficient attention to factors pertaining to the human side, such as at the individual or team level (Liu et al., 2017). Hence, engaging in research that focuses on individual level influences at play in strategic partnerships, such as individual resilience, interpersonal trust, ethnocentric beliefs between the contracting parties and managing episodes of power in the strategic partner relationships, is critical as actions of key individuals affect the relationship quality in such partnerships (Liu, 2018; Malik et al., 2018). Furthermore, the literature on micro-foundations of ambidexterity in an international business partnerships context, highlights how individual drivers of ambidexterity, such as managerial decision-making, emotional intelligence, transformational leadership behaviors, intellectual capital, motivation for deploying certain resources and managing its coordination, and knowledge sharing behaviors in such as partnerships are critical in their success (see e.g. recent review by Christofi et al., 2019; Hughes et al., 2020; Liu & Huang, 2018). Thus, employing a micro‐foundational lens through a longitudinal case study design of a Biopharma EMNE, this paper generates novel insights of micro-foundational aspects at play while examining the three intersecting literatures on organisational ambidexterity, strategic alliances in EMNEs and the role of leadership in managing tensions, inherent in such contexts, to achieve innovation.

Studies on organisational ambidexterity have highlighted its significance to firms’ innovation outcome and thus positively contributing to overall performance (Junni, Sarala, Taras & Tarba, 2013; Malik, Pereira and Tarba, 2017). Broadly organisational ambidexterity refers to an organisation’s ability to simultaneously *explore* new knowledge without compromising *exploitation* of existing knowledge and mechanism (O’Reilly & Tushman, 2008; Raisch & Birkinshaw, 2008). However, as Gupta et al. (2006) note, “although near consensus exists on the need for balance [of exploitation and exploration], there is considerably less clarity on how this balance can be achieved’ (Gupta et al. (2006, p. 697). Put simply, there is a gap in the literature on how organisations attain ambidexterity in practice and in our paper, we fill this gap by adopting a micro-foundational lens to explore how a rapidly growing Indian biopharmaceutical company (hereinafter India Biotech) developed ambidextrous practices over a period of thirty years since its inception. We argue that India Biotech is a unique and revelatory case, which during the initial period of its existence it explored and developed technical skill in undertaking fermentation processes and in the subsequent years it adopted international strategic partnerships to access new knowledge to develop manufacturing processes thus to exploit its technical expertise. In this paper, we trace the evolution of India Biotech from its early days as a manufacturer and supplier of industrial enzyme to a rapidly growing biopharmaceutical company involved in the co-development of new biopharmaceutical drugs. In particular, we focus our attention on how the company adopted new structures and processes to manage its four initial co-occurring strategic partnerships with international partners. Based on the above, we frame the following two critical research objectives:

1. *To investigate and explore the impact of micro-foundational aspects of ambidextrous practices (such as structural separation, role partitioning and dynamic capabilities) and individual-level behaviours (co-opetition, knowledge integration, absorptive capacity and co-competency sharing) such as in the case study EMNE during the co-occurring of four international strategic alliances;* and
2. *To explore the contribution of leadership (such as leadership style) in influencing and encouraging organizational ambidexterity (contextual and structural) by creating an ambidextrous context in this case organisation.*

By investigating the above research objectives, we aim to fill several gaps in the current understanding of *how* micro-foundational aspects of organizational ambidexterity have an influence on firms international strategic business partnerships. . To the best of knowledge, our distinctive contribution lies in presenting a longitudinal analysis of three intersecting strands of theoretical literatures in the context of international alliancing activities in a biopharma MNE. We uncover and present a nuanced view of the various factors at play at different stages of the MNEs evolution, success and the challenges it faced.

The remainder of the paper is structured as follows. The next section discusses the relevant literature on ambidexterity, micro-foundations of ambidexterity in strategic partnerships such as alliances and the role of leadership in achieving alliance goals of innovation, cooperation and collaboration. This is followed by our research design, which offers details of the case study organisation and the data analysed. Thereafter we present our findings in light of the extant literature, which we critically link to the literature and then conclude by highlighting the contributions and limitations of our study.

# Literature Review

## Organisational Ambidexterity

Organisational ambidexterity has emerged as a new research paradigm in organisation theory, when it comes to explaining firm-level differences in growth and performance, yet several issues fundamental to this debate remain controversial (O'Reilly & Tushman, 2013; Raisch, Birkinshaw, Probst, & Tushman, 2009). For example, as indicated by Turner, Swart, & Maylor (2013), the theorization of ambidexterity is inadequate for complex, practical realities, which, in turn, hinders the way in which ambidexterity can be managed in practice. In their meta-analytic study on the impact of the ambidexterity on the organisational performance Junni, Sarala, Taras, & Tarba (2013) found that positive and significant organisational ambidexterity-performance relationships are to a large extent moderated by contextual factors and methodological choices. More specifically, they found that organisational ambidexterity is particularly important for performance in non-manufacturing industries and at higher levels of analysis, and the performance effects are stronger when ‘combined’ measures of organisational ambidexterity and perceptual performance are used and when a cross-sectional or multimethod research design is applied. The findings of the afore-mentioned meta-analysis revealed part of the moderators in the organisational ambidexterity-performance relationship, thereby providing a more fine-grained understanding of the effects of organisational ambidexterity on firm performance and thus calling for further research on the micro-foundations aspects of ambidexterity. Within the literature on organizational ambidexterity, there are three commonly noted forms: (1) structural ambidexterity, which focuses on structural separation of exploratory and exploitative modes of learning (O’Rielly & Tushman, 2011); (2) contextual ambidexterity, where employees are driven by an organisation’s values and expected behaviours, therefore they self-partition their time towards exploratory and exploitative activities (Raisch et al., 2009; Malik et al., 2017, 2019); and (3) sequential ambidexterity, wherein an organsiation experiences bouts of exploration followed by exploitation and then exploration in a punctuated equilibrium manner or a structural ambidexterity followed by contextual ambidexterity (Gupta, Smith, & Shalley, [2006](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6743735/#CIT0034); Lavie et al., 2011).

## Micro-foundational Antecedents of Organisational Ambidexterity

As highlighted by Martin, Keller, & Fortwengel (2019), most of the existing body of literature distinguishes between various approaches on how organisations can be ambidextrous, but we know little about how specifically ambidexterity is accomplished and managed, and thus utilizing the micro-foundational approach for studying ambidexterity becomes imperative. Furthermore, in their attempt to demystify the role of the top management behavioural integration, Venugopal, Krishnan, Upadhyayula, & Kumar (2020) utilized the micro-foundational lens in their study of 78 SMEs and found that combined ambidexterity completely mediates the relationship between behavioural integration and firm performance.

Recently Wankhade, Stokes, Tarba, & Rodgers (2019) have underscored that whilst emergency services face evident ‘macro-extreme’ challenges, the employees in parallel, on their side, also experience everyday ‘routine’ within the micro-settings, and this interaction of micro-episodes with macro-extreme dynamics provides an excellent opportunity to further investigate the yet rather underexplored micro-foundations of organisational ambidexterity. Another study by Mazzelli, De Massis, Petruzzelli, Del Giudice, & Khan (2019) adopted a micro-foundational perspective to challenge the consensual view of ambidextrous search as a superior approach to addressing performance problems. Their study concluded that a search approach that is conducive to superior performance in non-family firms may yield inferior performance in family firms depending on the senior leader's family membership and her/his positional history in the firm (i.e., non-family, founder, later-generation). In this context, Christofi, Vrontis, & Cadogan (2019) conducted a systematic literature review from a micro-foundational perspective, within the context of Multinational Enterprises (MNEs), and by consolidating the extant knowledge, proposed a comprehensive framework that maps the existing studies within and across various disciplines and multiple levels of analysis. Below, we discuss a few sub-sets of micro-foundations in the ambidexterity context.

### Role partitioning

Reflecting the growing interest on the topic of the micro-foundations in the ambidexterity realm, recently Tempelaar & Rosenkranz (2019) explored the factors that enable individuals to address the exploitation-exploration dilemma, and underlined that one of the central challenges generated by ambidexterity is the multiplicity and divergence of organisational roles, to which individuals need to cater, when exploiting and exploring. Based on data from 120 global account managers employed by multinationals with an average size of 73,348 employees, their findings show that role segmentation negatively influences an individual’s ability to behave ambidextrously, but rather strikingly the impact of role segmentation becomes positive while operating in cross-functional teams.

### Co-opetition and co-competencies

In one of the pioneering studies Luo & Rui (2009) presented an ambidexterity perspective on the international expansion of emerging economy enterprises (EMNEs), highlighting the unique strategic behaviour of EMNEs. Their study was based on several cases from China and showed that while all firms need and maintain some degree of ambidexterity, EMNEs have stronger motives and abilities to build and leverage such ambidexterity to offset their late-mover disadvantages. Moreover, this study illustrated that EMNEs behave co-evolutionarily to cope with challenges in the external environment they face at home and abroad, leverage their co-competence (transactional and relational) to fight against their global rivals, enhance co-opetitive (simultaneous cooperation and competition) ties with their business stakeholders, and sustain co-orientations (leveraging competitive advantages to strengthen short-term survival and compensating competitive shortcomings for long-term growth).

### Dynamic capabilities for balancing of local/global markets

Recently, ambidexterity was noted as a dynamic capability, underpinning globalization of multinational business enterprise (MBE) within the international business domain (Vahlne & Johansson, 2017). As highlighted by Hsu, Lien, & Chen (2013), conventional IB theories underscore the importance and implications of a firm's exploitative strategy, but the unprecedented competitive nature of contemporary business necessitates the essence of simultaneous execution of exploitation and exploration activities to attain superior performance. In this vein, exploring the presumably important yet unclear and under-investigated role of domestic market activities for the internationalizing firm through the theoretical lens of ambidexterity, Karafyllia & Zucchella (2017) show how firms leverage intrinsic organisational synergies and manage the competitive and at times irreconcilable pressures resulting from the interplay between exploitation–exploration while operating in the domestic and international markets. Similarly, drawing on the knowledge-based dynamic capabilities view and based on data collected from 308 employees of 20 Chinese multinational enterprises, Shamim, Zeng, Choksy, & Shariq (2019) found that big data management capabilities serve as antecedents to ambidexterity (exploratory and exploitative activities) at the individual employee level.

## Strategic Business Partnerships

There is an increasing uptake of numerous forms of strategic business partnerships (Gomes, Angwin, Weber, & Tarba, 2013; Pak, Ra, & Lee, 2015) when firms exercise their strategic choice options. These usually take the form of mergers, acquisitions and strategic alliances. The literature is well developed with regard to the critical success factors of different forms of strategic business partnerships (e.g. Gomes et al., 2013; Gomes, Angwin, Peter, & Mellahi, 2012). A key aspect that affects the success of most partnerships is how well the partners develop a sense of cooperation, commitment and collaboration between each other and engage in participative decision-making. They need to balance several dualities such as developing relational and hierarchical contracts for effective sharing of knowledge, resources and business and HRM practices (Contractor & Woodley, 2015; Henderson, 1990).

### Business-to-business

In strategic business-to-business partnerships and relationships, it is important to navigate successfully through intercultural encounters (Malik, Ngo & Kingshott, 2018) by utilizing a firm’s business and individual level resources such as trust, power and organisational capabilities. Im and Rai (2008), applying the concept of ambidextrous learning in the form of knowledge sharing ambidexterity to study whether exploitative and exploratory knowledge sharing in long-term inter-organisational relationships impacts on performance and relationship quality. The study found support for both exploratory and exploitative learning to have a positive impact on performance and relationship gains in an inter-organisational setting. In a similar vein, Kauppila (2010), focused on how a business can create an ambidextrous context in inter-organisational settings to achieve innovation outcomes. The study found a firm must create an organisational context that first creates both exploration and exploitation engines within the firm and then further augments both activities in its inter-organisational partnership through structural separation.

In an international business context, managing such relationships usually occurs between two geographically separate and sometimes even culturally distinct partners. For example, Stokes, Liu, Smith, Leidner, Moore, & Rowland (2015) found the presence of flexible and resilient people management practices is vital in managing cross-border relationships between a very culturally diverse collaboration: Sino-German collaboration. Much of this stream of literature in strategic business partnerships falls under two categories: the key resources and capabilities needed for post-merger integration (PMI) success or successfully managing alliance dynamics. Emerging research in this area has focused on the concept of organisational ambidexterity or strategic dualities of, for example, exploration and exploitation in successfully managing the business partnerships. The following section reviews the literature on ambidexterity in strategic partnerships.

## Ambidexterity in Strategic Partnerships

In a study of 172 Finnish manufacturing firms, Kauppila (2015) argued that firms in an alliance structure must deploy co-exploration and co-exploitation processes to successfully leverage the benefits of its alliance formation. The study found that while co-exploration had a positive impact on long-term firm growth, co-exploitation yielded a short-term positive impact on financial results. Interestingly, simultaneous pursuit of co-exploration and co-exploitation had a negative impact on firm performance.

### Balancing institutional and network pressures

Khan, Rao-Nicholson & Tarba (2018), in the context of cross-border global networks of suppliers of automotive parts in Pakistani vendors working with Japanese and Chinese partners found the presence of a balancing strategy as critical in managing the network, especially when the institutional mechanisms were weak in Pakistan’s context. A weak institutional context is conducive to only exploitative gains and as such a balancing strategy was needed to create exploratory gains. Lin, Yang, & Demirkan (2007) offer an interesting account of how performance is affected in strategic alliance formation that is ambidextrous in its form. Their study highlights the firm- and industry-level differences and the wider institutional environment in which a firm is embedded in to also be factored in explaining performance differences in strategic alliances that are pursuing an ambidextrous design. Analysing data from five industries in the US over a five-year period, their study highlights greater performance benefits for larger firms relative to small and medium enterprises. They found the trade-offs are higher for smaller firms who either engage in exploitative or exploratory activities but not both. Their study further demonstrates key firm characteristics of firm’s centrality and structural holes as key moderators between strategic alliance formation choice and firm performance such that the ambidexterity-performance thesis only applies to the earlier stage of the network.

### Structural separation

Lavie, Kang, & Rosenkopf (2011) argue that firms in strategic alliances can overcome the common problems of resource and time trade-offs associated with structural ambidexterity and achieve higher performance results by focusing on exploration in one domain while exploiting the other. The authors found limited support for balancing within a domain. Such balancing must occur both across domains of business activity. For example, firms can engage in R&D alliances while collaborating with their current partners or they can alliances in production and marketing functions whilst looking for new partners at the same time. Also, employing similar argument and analysing data from 190 US-based software development firms, Stettner & Lavie (2014) highlight that in an alliance the need to balance between, rather than within modes of operation, for simultaneously balancing exploring and exploiting. The authors contend that balancing across the modes will help overcome issues of conflicting routines, limits on specialisation and enhances performance. The findings further reveal that exploration through externally oriented modes and exploitation within the internal modes is highly beneficial for firm performance.

### Absorptive Capacity and knowledge integration mechanisms

Firms in a network, especially in a range of diverse inter-organizational strategic partnerships often have to build on their existing knowledge bases to enhance their knowledge portfolio of new general and specialist knowledge through absorptive capacity (Zahra & George, 2002). Others (Grant, 1996) have also suggested that a firm’s knowledge integration capability is its dynamics capability, as it allows firms to integrate general, specialist and complementary knowledge to its productive routines. Knowledge integration capabilities has been noted as a critical capability in high-technology inter-organizational firms for enlarging the efficiency and scope of acquiring new specialist and general knowledge (Malik & Nilakant, 2015; Malik, Froese & Sharma, 2020)

## Leadership style and its impact on organisational ambidexterity

### Transformational and Empowerment-focused Leadership Styles

Integrating theories of transformational leadership (TFL) and organisational ambidexterity in strategic human resource management (SHRM), Chang (2015) examined how transformational leadership at both the unit level and firm level impacts unit-level organisational ambidexterity by transforming the unit-level trust and forming the firm-level trust climate in Taiwanese software firms in an Asia-Pacific context. Furthermore, the study of Chang (2015) showed that unit-level transformational leadership has been positively associated with unit-level OA, and this relationship was moderated by firm-level transformational leadership. In a recent study of healthcare professionals in a multi-specialty hospital setting, Malik, Boyle, & Mitchell (2017) found the critical role of trust and empowerment focused work designs deliberately proposed by the senior leadership team helped manage the tensions between nurses and senior physicians and clinicians. The leaders created dual processes of playing a ‘good-cop/bad-cop’ between employee groups for managing the tension and delivering clinical and business model innovations.

### Other Leadership Styles

Also building on the micro-foundations of ambidexterity from an emerging market context, in a samples of 105 acquisitions of emerging market multinationals, Rao-Nicholson, Khan, Akhtar, & Merchant (2016) noted the impact of leadership style on organisational ambidexterity (OA) and employee’s psychological safety (ESP). Relative to transactional and lassie-faire leadership style, charismatic leadership style was strongly related to OA and ESP. Further, transactional leadership style yielded better associations relative to lassie-faire style of leadership.

### Distributed Leadership

In another study examining micro-level foundations of the contingent role of distributed leadership in examining the relationship between HRM practices and OA in the context of 84 cross-border mergers and acquisitions in emerging market multinationals, Rao-Nicholson, Khan, Akhtar, & Tarba (2016). The authors found that HRM practices have a positive impact on these firms’ OA. Further, this relationship was moderated by the contingent role of distributed leadership, wherein the impact of HRM practices on OA was much stronger in the success of cross-border M&A relationships. Research by Friedman et al. (2015) also noted the importance of individual level employee behaviour as critical to integration in strategic partnerships. Others, for example, Angwin et al. (2014) identified processual and nature of communication between the partners as a critical factor affecting the success of post-merger integration (PMI). Also related to PMI success, Yahiaoui, Chebbi, & Weber (2016) highlight the importance of a partner’s ability to integrate knowledge. Other enablers of PMI success, as identified by Vasilaki, Tarba, Ahammad, & Glaister (2016) include the presence of employee commitment and involvement enhancing HRM practices, teamwork, and training and development.

### Top Management Teams

Synthesizing insights from social cognition and upper-echelons perspectives, Heavey & Simsek (2017) on their part suggested a new theoretical vantage point that brings the role of top management teams’ cognitive structure to the fore and, in particular, the enabling impact of transactive memory systems. Specifically, they maintained that transactive memory equips a top management team with a system for generating, distributing, and integrating knowledge based on members’ specific areas of expertise in ways that enhance its ability to both differentiate and integrate strategic agendas for ambidexterity, and found that while top management teams with well-developed transactive memory systems are able to pursue an ambidextrous orientation, the impact of transactive memory is also shaped by diverse organisational experience and functional expertise within these teams (Heavey & Simsek, 2017). Examining co-product development efforts at a US subsidiary in India specializing in design and development of semiconductors and microprocessors, Malik, Pereira, & Tarba (2019) found support for the role of transformational leadership in top management teams for supporting product development between the subsidiary and parent firm locations. The senior leadership team purposively created a ‘mirroring’ approach between all capabilities at the subsidiary and parent firm’s headquarters and other competency sites to enable simultaneous pursuit of exploring core technical capabilities alongside new products that are suited for emerging markets such as India.

## Micro-foundations of organisational ambidexterity: A Critique

Our review highlights several micro-level drivers and moderators affecting ambidexterity and innovation pursuits. These include factors, such as capabilities, balancing institutional and inter-organisational relationship factors, task-level designs, team-level design, work processes and individual management and leadership styles. What is also evident from our review above is the equivocal nature of relationships underpinning organisational ambidexterity, which also suggests the need for further research in the field. From a methodological perspective, while there was good balance between qualitative and quantitative case studies, majority of the designs were cross-sectional in nature and there is a paucity of empirical longitudinal designs, especially involving more than one strategic business partner in an alliance relationship. The number of studies exploring processual aspects or *how* questions is also limited. Further, these relationships have not been examined extensively in a cross-cultural, cross-sectoral and the focus has almost always been devoid of contemporaneousness.

Our longitudinal, qualitative case study design, involving an embedded contemporaneous study of innovation in an EMNE Biopharma firm with multiple international alliance partners is in itself a novel and exemplary setting that brings to forth the complexities and nuances of *how* and *why* a number of micro-foundational factors across alliance partners (*who*) affect development of new and innovative biopharma products. The following section now justifies our choice of a qualitative research design.

# Research Design

To address our overarching research objectives, we carried out an empirical study. A case study method was employed to discern deeper understanding of complex organisational phenomenon (Yin, 1994; Silverman, 2005) in their own context (Teagarden et al., 2017). Instead of generating completely new theory, our objective of the present research is to capture and deepen our understanding of micro foundational underpinnings of ambidexterity. Considering the need for detailed information to capture micro-foundational aspects of ambidextrous practices, an in-depth study in a single organisation was considered appropriate. In adopting this methodological approach we followed the recommendation of Dyer & Wilkins (1991) that one in-depth case study is more reliable and valid than multiple superficial case studies. O’Reilly & Tushman (2013) have also robustly made the case for adopting in-depth single case studies to capture complexities of ambidexterity. We also concluded that adopting a longitudinal processual approach was needed to undertake an in-depth exploration ambidextrous practices in the organisation. In line with longitudinal processual approach (Dawson 1997), we first developed a chronological evolution of India Biotech, , from its origin in late 1970s as a manufacturer of industrial enzymes to its current state, as one of the fastest growing bio-pharmaceutical companies in India. In the first decade of its existence, India Biotech developed its expertise in fermentation skills and process development to manufacture enzymes at industrial scale. In mid-1990s it shifted its orientation towards becoming a full-fledged biopharmaceutical company and to achieve this objective it adopted strategic partnerships with international research centres and dedicated biotechnology firms (DBFs). We particularly paid attention to the company’s initial four strategic partnerships to capture the context in which it made attempts to develop new organisational structures and processes to simultaneously form and manage strategic partnerships to explore new drug development opportunities and leverage its fermentation and process manufacturing expertise.

## Research setting and data sources

The research setting is India Biotech, one of the fastest growing bio-pharmaceutical company headquartered in India. The company was founded in late 1970s as a manufacturer of industrial enzymes by using solid-state[[1]](#footnote-1) microbial enzyme fermentation production process. By late 1980s, it had succeeded in leveraging its expertise to develop submerged state fermentation production process, and established a state-of-the-art facility for large-scale microbial deep tank fermentation. Recognising the potential advantages of combining the best of both fermentation processes, the company initiated an R&D programme to develop a novel hybrid bioreactor, which it subsequently scaled up to plant level.

In mid 1990s, India Biotech set-up a subsidiary contract research division to cater to early stage drug discovery needs of other biotechnology and pharmaceutical companies and in 1998 the company leveraged its strong fermentation knowledge and skills for production of enzymes in chemical synthesis and recombinant technologies to ventured into manufacturing of small molecules (Active Pharmaceutical Ingredients (APIs) such as statins and immunosuppressant) and recombinant proteins (human insulin). By early 2000, it acquired approval from the US Food and Drug Administration (FDA) to manufacture lovastatin, a cholesterol-lowering molecule, which helped the company to become an exporter of APIs to global pharmaceutical companies. During this period, India Biotech also became a major producer of insulin in the country.

In the beginning of the millennium, India Biotech aspired to become a full-fledged biopharmaceutical company. Although India Biotech had attained expertise in process development and manufacturing, undertaking clinical trials and marketing products in India and other countries in Asia, it lacked capabilities to discover new therapeutic molecules. To overcome this limitation, it formed strategic partnerships with international research institutes and smaller dedicated biotechnology firms (DBFs). In 2003, it formed its first international alliance with the commercial arm of a research institute (henceforth CBI), to develop and market Monoclonal Antibodies (MAbs) based drugs for the treatment of cancer. Later that year, it entered into another strategic partnership with a US based DBF (henceforth US DBF1) to use its proprietary technology platform to co-develop humanized MAbs. From the perspective of India Biotech, both the alliances were critical for two reasons. First, the alliances introduced India Biotech to MAbs, which are considered more complex and advanced antibodies; and second the partnerships provided it an opportunity to develop capabilities to manage partnerships with international partners. Subsequently India Biotech formed two more alliances with two different US based DBFs (henceforth US DBF2 and US DBF3 respectively). In 2004, India Biotech successfully launched a bio-insulin followed by an anti-cancer drug in 2006 that India Biotech had co-developed with CBI. In 2007, the company divested its enzyme business to further cement its position as a full-fledged biopharmaceutical company.

The data source for our study comprise of (a) qualitative data generated from semi-structured interviews with key personnel, particularly in India Biotech’s R&D division; and (b) numerous archival data including corporate documents, press releases, annual reports and other investor presentations. We focused on the R&D division of the company for two reasons. First, the R&D division was at the centre of all technical or process development activities; and (b) all the international strategic alliances were organised and managed by members of the R&D division. In other words, the R&D division was at the crux of both exploration and exploitation development as well as international strategic alliance activities. Over a period of 15 months (July 2008 to September 2009) we interviewed 8 scientists who also had senior managerial roles within the R&D division. When we initiated our field work, the company had formed three international strategic alliances. Whereas the alliance with CBI was operating smoothly, the alliance with US DBF1 was dithering due to lack of performance and breakdown of trust between the two partners and in case of the third alliance, India Biotech had recently acquired US DBF2’s intellectual property following US DBF2 becoming bankrupt. During the course of our field research, India Biotech established another strategic partnership with a US based DBF (hence forth US DBF4). We interviewed some of the respondents more than once and each in-depth interview lasted from one hour to over two hours. The interviews were recorded and transcribed and shared with the respondents. Moreover, interviews were semi-structured and based on a common guide derived from the case study plan.

Our data collection was underpinned by our twin research objectives, i.e. (a) investigating micro foundational aspects of ambidextrous practices as India Biotech simultaneously pursued, through its strategic partnerships exploration of new knowledge to develop MAb based drugs and exploitation of its existing strong fermentation knowledge; and (b) exploring the role of leadership in creating context to facilitate ambidextrous practices. Therefore, in our interviews we sought to gather information on (a) historical evolution of India Biotech; (b) strategic rationale and chronology of events in case of each of the four strategic partnerships; (c) key lessons the company learnt from different events pertaining to the respective alliances; (d) specific actions India Biotech took to develop structures and processes to manage its international strategic partnerships. In interviewing the current as well as the previous Heads of R&D, one of whom was a member of India Biotech’s Board of Directors, we asked questions relating to corporate and R&D strategies of India Biotech and how these strategies evolved over time. Interviewing the head of legal department, we focused our attention to understanding the processes involving the initial negotiation and drafting of the contractual agreements. The key focus of the interviews was to assess and capture the key aspects underpinning efforts to develop structures and processes to manage the growing number of international alliances with multiple partners. Figure 1 captures India-Biotech’s fermentation skill base. Figure 2 provides the evolution of India-Biotech’s product profile from the technology base. Figure 3 captures the timeline of the growth of India- Biotech.

(Insert Figure 1 over here)

(Insert Figure 2 over here)

(Insert Figure 3 over here)

## Data Analysis

The nature of our research objectives made an inductive approach to data analysis appropriate. Following Miles and Huberman (1994) and Gioia, Corley & Hamilton (2013), we used three step analysis from raw data to the final outcome. Development of cohesive construct was facilitated by systematic comparisons of data, emerging categories, and literature review. To address our research objectives, we employed interview transcripts as primary data for the analysis and we combined these primary data sources with secondary data sources in tracing the phases underpinning evolution of India Biotech.

Step 1: As a first step, after examining all interview transcripts, exploration and exploitation patterns were identified at different stages of India Biotech’s evolution. In this way, we identified three broad phases of India Biotech’s evolution and we further identified what exploration and exploitation entailed in the three phases. NVivo software and Excel spreadsheets were employed to help in the conceptual coding of the data. Then, broad categories that emerged from the data were used to offer general insights into exploration – exploitation practices.

Step 2: As a second step, the first-order concepts derived from broad categories were linked to second-order themes, and then to aggregate dimensions organized around exploration – exploitation in the three phases. Concepts and relationships, organized around our two research objectives were identified from the data. For example, we found that the senior management, particularly the founder of India Biotech was instrumental in creating a culture that promoted access, development, refinement of technical knowledge, particularly aimed at developing expertise around fermentation skill base and scaling for plant level. The founder was also instrumental in setting higher organisational aspirations, and adopted expert communicational approach such as goal setting and probing in encouraging scientists in the organisation to embrace risk taking, particularly in respect to accessing and exploring new knowledge. The ideas of empirically grounded first-order codes were then linked to explorative activities of theoretically grounded second-order categories, which were later linked to creation and existence of contextual ambidexterity. Similarly, we identified specific challenges that India Biotech encountered in managing international strategic partnerships, particularly in relation to US DBF1. As a consequence, India Biotech evaluated its structure and processes and created new processes to better manage its relationships with strategic partners. In this process, we linked the first order codes with second order categories, which were then linked to creation of structural ambidexterity (stated as aggregated dimension).

Step 3: As a final step, an explanation of contextual and structural ambidexterity underpinned by emerging processes and practices was developed. Further, we sought recent research on micro foundation and ambidexterity, particularly in the context of strategic partnership along with existing studies were used in order to refine our understandings. The final data structure is illustrated in figure 4, which summarises first order constructs and second order themes (structures, processes and mechanisms).

We mitigated the informant bias in several ways. First, we followed an interview guide directing the informants to inform us the chronologies of objective events, behaviour of central actors and other relevant information they deemed necessary regarding (a) the evolution of India Biotech in general; and (b) the strategic partnerships India Biotech had formed. In context to the strategic partnership, the guide focused on exploring how the partnerships were initiated and negotiated, what were the goals and objectives specific to each partnership, who were the key actors involved in the respective alliances, what challenges the alliances face over time and how India Biotech mitigated the challenges and what structural and process changes India Biotech, learning from partnership related challenges. Second, we gathered information from various secondary sources including those we could directly access from India Biotech (such as – its annual reports, presentations made to (potential) investors and industry experts, and half yearly conference of India Biotech’s CEO with the press as well as investors) and sources available from various media (e.g. interviews of India Biotech’s senior managers on developments relating to co-developed drugs) and published information, in form of book chapters, written by members of the company’s R&D team on technical matters relating to development of fermentation and process expertise to triangulate our interview data (Eisenhardt, 1989; Yin, 2009). Third, our contemporaneous data collection strategy for the organisation in general and the four strategic partnerships formed was highly revelatory and allowed us to understand ambidextrous practices India Biotech adopted as it used strategic partnerships to simultaneously engage in exploration of new knowledge and exploitation of its existing process and manufacturing capabilities.

Table 1 provides the overview of four alliances and Table 2 provides detailed information about the informants and focus of our interview.

(Insert Table 1 over here)

(Insert Table 2 over here)

# Findings and Discussion

We organise our findings around the two overarching research objectives. Our first research objective sought to investigate and capture micro-foundational aspects of different ambidextrous practices (exploitation and exploration) and behaviour of key individuals as India Biotech shifted its focus towards co-developing new biopharmaceutical drugs in strategic partnerships. In this context, India Biotech’s internationalization process, in the form of formation of strategic partnerships with international partners include a set of decisions concerned with balancing the twin necessity for exploitation (of fermentation process and manufacturing expertise) in the current environment alongside exploration (of resource input in the form of new knowledge to co-develop MAb based drugs) for domestic as well as foreign markets (Raisch et al., 2009; Kauppila, 2015; Stadler et al., 2014).

Our findings, illustrate that India Biotech has evolved in three phases (as depicted in figures 3 and 4 in particular). It first followed a sequential and then simultaneous ambidextrous approach (Goossen, Bazzazian, & Phelps, 2012 Gupta, Smith & Shalley, 2006; Lavie et al., 2011). For instance, as illustrated in Figures 1 and 2, in the initial years between late 1970s to mid-1990s the company pursued the strategy of exploring and refining its fermentation based process development expertise to manufacture enzymes and exploiting its process development skills to manufacture small generic molecules, such as statins and immuno-suppressants. In the second phase of its growth 1990s, India Biotech it further exploited its proprietary technical base to manufacture human insulin and gained an approval from the US FDA for manufacturing cholesterol lowering molecules in 2001. In the process, India Biotech gained reputation as a trusted and reliable supplier of statins and immune-suppressants (also called as small molecule active pharmaceutical ingredients – APIs) to global pharmaceutical companies. It set up a subsidiary contract research organisation to further cement its relationships with pharmaceutical companies by undertaking their downstream activities, such as clinical trials. Although India Biotech aspired, since early 1990s, to become a full-fledged biopharmaceutical company, it was only at the beginning of the millennium that it actively pursued the strategy of forming strategic partnerships with DBFs to co-develop new bio-pharmaceutical drugs. Entering into strategic partnerships provided India Biotech the opportunity to engage in exploratory learning and new knowledge creation, particularly centred around developing MAb based drugs. Thus, its focus on international strategic partnerships was driven by knowledge and competency gaps particularly relating to MAbs, and in the process India Biotech got access and knowledge to handle such complex molecules, thereby engaging in simultaneous pursuit of exploitation and exploration. In Figure 4, we have portrayed the evidence for development of structural separation through new structures and processes, resulting from its strategic partnership activities. In this respect, we found that only when -India Biotech experienced significant challenges in managing its relationship with US DBF1, it evaluated its processes and practices relating to pre-strategic partnership formation (partner selection, negotiation and contract drafting) and post-formation (managing relationship at alliance management level, involving the Alliance Management Team - AMT); and managing relationship between India Biotech’s AMT member and members of its operational team) members). It is critical to emphasize that until the company entered into partnership with CBI, it did not possess substantive previous experience of forming or being part of any other partnership (Lavie, Kang & Rosenkopf, 2011; Stettner & Lavie, 2014) and therefore its organisational structures and processes needed significant changes derive value from such partnerships (Kale and Singh, 2009). The deterioration of relationship with US DBF1 provided that window of opportunity to create new structures and processes. In this respect, we specifically adopted micro-foundational lens to identify specific organisational structures, processes and routines as the company attempted to become ambidextrous (Felin et al., 2015).

Our second research objective pertained to explore the role and contribution of India Biotech’s leadership in fostering organisational ambidexterity by creating fruitful condition, including organisational culture. In this context we attempted to capture in detail the role of the company’s founder in shaping India Biotech’s path of evolution and development of India Biotech. Whereas the first research objective allowed us to explore structural ambidexterity, the second objective provided insights on development of contextual ambidexterity. In presenting our findings, we first provide insights on leadership and contextual ambidexterity (Chang, 2015; Malik et al., 2017, 2018; Rao-Nicholson et al., 2016) and then later present insights on how the new structures and processes emerged to manage strategic partnership.

## Leadership and Contextual Ambidexterity

Recent empirical studies have shown the influence of leadership, including top management teams, in creating conditions that foster organisational ambidexterity (Yitzhack et al., 2015; Luo et al., 2016). In our chronological overview of the evolution of India Biotech, we focused our attention on the key events that underpinned the company’s efforts to become an ambidextrous organisation. In this context, we identified three critical junctures / decisions that underpinned the company’s evolution: (1) period between 1978 and early 1990s when the company enhancing and consolidating its solid-state fermentation capabilities to become a major producer and exporter of enzymes for food, beverages, brewing, and distilling industries; (2) the mid-1990s decision to become a competitive player in the Indian pharmaceutical industry by manufacturing APIs including statins and immunosuppressant; and (3) The decision in 2002-03 to become a full-fledged bio-pharmaceutical company. Whereas the first decision ensured that India Biotech was able to exploit its fermentation skills base to produce generic APIs, the later decision provided the company insights and knowledge on the working of potential finished drugs. This decision essentially entailed collaborative approach to drug development, particularly in partnership with international DBFs or research institutes. Co-development of new drugs in partnership, thus, highlights the efforts by the company to become a serious player in the emerging biopharmaceutical sector. The Chairman’s report in the 2008 Annual Report aptly highlights the aspiration of the company: :

***“****Over the past three decades, India Biotech has transformed itself from an entrepreneurial, enzymes enterprise to the country’s first publicly listed biopharmaceuticals company of global standing… (India Biotech) has continuously re-invented itself. In the first 20 years, we concentrated on enzymes. In the last 10, we have focused on biopharma and services. Today, we enter new markets with our own products...”* ***(Chairman’s Report 2008: 11)***

We infer two things from the above quotation. First, the company has always tried to re-invent itself and the re-invention has always been building on its fermentation skill base, i.e technical expertise to undertake process development, and second it highlights a culture in the organisation that encourage experimentation towards gaining mastery of the technical knowledge. More depth on these two aspects are articulated elsewhere too. The R&D programme in the company commenced in early 1984s with team of three scientists who in the process of searching for published information on laboratory scale and plant scale fermentation procedures developed solid knowledge base in fermentation processes. Mazumdar – Shaw & Suryanarayan (2003) have provided insightful information on how India Biotech developed its fermentation expertise during those initial days:

*“In 1984 the R&D team faced an uphill task fraught with a number of challenges: solid state fermentation technology was a well-documented technology. There were limited published information on the laboratory and plant scale fermentation procedures…this therefore entailed extensive amount of knowledge gathering and ‘re-inventing the wheel’…but what this effort achieved was the creation of a strong knowledge base in fermentation, which encompassed developing skills in strain selection, strain mutation and process development*” (Mazumdar – Shaw and Suryanarayan, 2003: 31).

By 1989, the team had succeeded in scaling up the proprietary fermentation technology to from laboratory to production plant. They also highlight the ethos of the senior management team that emphasised internalising learning and innovation (Heavey & Simsek, 2017). Our respondents also articulated the contribution of the founder in creating a culture of learning and innovation in India Biotech. The Head of R&D, who had previously worked with a major US based biotech firm and was recruited to oversee scaling up of the recombinant insulin programme, alluded to a culture of “we can do it”. He provides an illustration to substantiate this cultural aspect. He says:

*“I think the key thing; the reason why we have done what we have done is that there is a lot of ‘chutzpah’, to use the phrase that ‘we can do it’…*

*I think a lot of it is driven by XXX (the founder) …who would always say, ‘why can’t you do this?’ This childlike questioning approach – ‘why can’t you do this?’ ‘What is the trick in it’? ‘Is it too complicated’? ‘Can we read it out’? ‘Can we understand’? ‘Can we try our hands in it and may be it will work’…so, I think that attitude which I would say sounds very naïve, I think that maybe to an extent been our strength”* *(Head of R&D)***.**

Another manager also articulated on the influence of the founder on the prevailing culture (in the R&D):

*“…the founder is different...has got a very interesting kind of personality…not a typical CEO, who is like knows everything. This is very refreshing kind of attitude…no one can know everything and that is why she asks penetrating question …very simple questions but very penetrating. That will make us believe that it is possible to do it and people around her believe her enough to do it. It excites them…we have a very buoyant kind of culture…buoyant kind…very crazy sometimes manic …but we want to learn new things...we are enthusiastic about learning new things and trying new things”* *(Senior Project Manager 1).*

It is critical to highlight here that majority of senior scientists had studied in major technological institutions in India and abroad and were handpicked by the founder to join the organisation. The evolution of India Biotech from an enzyme company to a biopharmaceutical company possessing expertise to co-develop and market branded pharmaceutical products at one hand highlights the the strategic decisions made by the senior management team (Raisch, Birkinshaw, Probst, & Tushman, 2009; Chang, 2015; Heavey & Simsek, 2017), in the context of first exploring and subsequently exploiting its fermentation skill base. At the other hand the evolution of the company, particularly in enhancing its technical competence initially through experimentation and subsequently through international strategic partnerships provide evidence of transformational and empowerment focused leadership (Malik, Boyle, & Mitchell 2017; Malik, Pereira, & Tarba, 2019). In this respect the founder of the company was attributed to foster a culture that encouraged experimentation and risk taking to enhance technical expertise of the members of the R&D team, in particular and also attracting expatriate scientists to join the organisation. In the next part, we provide evidence pertaining to development and embeddedness of structural ambidexterity to manage multiple co-occurring international strategic alliances.

## Managing Strategic partnerships through Structural Ambidexterity

Structural ambidexterity, in essence, reflect the specific requirements of the organisation’s task environments. As Christensen (1998) argues, organisational processes, structures and cultures that were suitable for exploiting existing technologies might not work when the organisation pursue exploratory activities (also see Malik et al. 2017).

India Biotech entered into the new millennium with a clear strategic focus –to further exploit its fermentation technology in becoming a full-fledged biopharmaceutical company. As we identified in our findings, the company evolved through three phases. By mid 1990s, it clearly started to articulate its vision of becoming a full-fledged biopharmaceutical company, which it became after it attained success in manufacturing r-insulin and subsequently introducing a new biopharmaceutical drug for the treatment of cancer. In that respect, beginning of the millennium (2000 onwards) represented a new dawn for the company, as highlighted in the Annual Report under the theme ‘A dynamic evolution’. It states:

*“-A Dynamic Evolution’’ represents India Biotech’s growth story. It reflects our spiralling progress in biotechnology from an enzyme-manufacturing company to a fully integrated bio-pharmaceutical enterprise…. our core expertise is our fermentation skills. Over the past two decades, we have developed, diversified and scaled up our fermentation technologies to produce high value products…. we have acquired new knowledge in the adjacent domains of genetic engineering and gene expression, and translated it to commercial advantage. Today, we leverage our fermentation expertise and innovative research skills in drug synthesis to focus on the biopharmaceutical opportunity, from small molecules to biologicals. Our thrust for the future is to develop, manufacture and market leading edge drugs for human healthcare.” (Annual Report, 2000: 2)*

To become a full-fledged biopharmaceutical company, that is to be able to develop, manufacture and market new drugs for human consumption, India Biotech pursued strategic alliances with research institutes and other DBFs. So, from a chronological point of view, the period from the millennium onwards, represents India Biotech’s efforts to develop a new expertise, i.e. to co-develop novel molecules with international partners. This new expertise, which in essence highlights ‘exploration’, needed different structures and processes to what it had developed in undertaking ‘exploitation’ previously. It is important to highlight that as it pursued exploration of new / novel drugs via co-development route, it continued manufacturing and exporting statins and immunosuppressant along with the enzymes. In presenting our findings we specifically adopted micro-foundational lens in identifying and analysing emerging structures, processes and actions of specific individuals in context to the formation and management of the initial four strategic alliances that India Biotech established with various international partners. In the process, we captured internal dynamics that underpinned the company’s attempts to develop its alliance management capabilities Development and institutionalisation of structures, processes and routines of alliance management capabilities, in essence, enabled India Biotech to become an ambidextrous organisation (Kale and Singh, 2009; Lavie, Kang, & Rosenkopf, 2011; Stettner & Lavie, 2014).

The literature on alliance evolution suggest that inter-organisational relationships evolve through overlapping stages of formation, operation and outcome/evaluation phases (Ring & Van de Ven, 1994; Das & Teng, 2002). Therefore, managing alliances entails developing distinct skills and competences to manage and oversee various tasks during different phases of alliance development process (Ireland, Hitt, & Vaidyanath, 2002; Kale & Singh, 2009; Schreiner, Kale, & Corsten, 2009; Kohtamaki, Rabetino, & Moller, 2018). Building upon insights from micro-foundational literature, we identified structures, processes and actions of key individuals in leadership roles along with the top management leadership teams, during two alliance development phases, namely (a) alliance formation; and (b) post alliance formation in respect to the four alliances India Biotech formed with it different international partners.

## Partner selection process

Literature on strategic alliances suggest that selection of partners is critical to the overall functioning of a relationship (see for instance Gomes et al., 2016; Ahlstrom et al., 2014). Therefore, how an organisation develops expertise to identify, evaluate and assess potential partners, and undertake robust negotiation to form alliances assume significance. This is particularly critical considering India Biotech was new to partnership formation activities for co-development of new therapeutic products. Broadly speaking, selection of a potential partner involves two key considerations: (1) Task related considerations (Tempelaar & Rosenkranz, 2019), including complementarities in terms of products, skills and resources (Luo & Rui (2009) that a potential partner could possess; and (2) Partner specific considerations such as strategic and cultural compatibility, reputation and commitment to alliance goals and objectives (Shah & Swaminathan, 2008; Beamish et al., 2016).

Task complementarities are of particular significance in the biopharmaceutical industry (Tempelaar & Rosenkranz, 2019), as development of new drugs result from collaborative endeavor amongst partners who possess specific expertise to facilitate necessary upstream or downstream activities (Powell et al., 1996; Rothaermel & Deeds, 2004; Cooke, 2005**).** India Biotech’s expertise on - fermentation and process development and manufacturing small molecules – were essentially downstream activities and it lacked expertise to discover new molecules. Hence, the decision *“*to *actively pursue forming partnerships to co-develop new products”* (Head of R&D). This strategy of forming partnerships with diverse research-driven partners including university research centers and DBFs thus became the cornerstone of India Biotech’s approach to become a full-fledged biopharmaceutical firm.

We found that all the four alliances were formed opportunistically, i.e. *“happened by chance”* (Head of R&D) and the India Biotech formed partnership with those *“whose technology was perceived to be useful at that point” (Programme Manager 2)*. For instance, India Biotech formed the alliance with CBI when India Biotech’s CEO visited the home country of CBI as part of a Government of India Trade Delegation. Similarly, initial interaction with US DBF 1 followed an informal email enquiry from the CEO of US DBF 1. According to one of the respondents, who was member of India Biotech’s Board of Directors, the alliance with US DBF 1 presented India Biotech the opportunity to hedge their alliance with CBI. He said, *“We did a very basic evaluation of their (US DBF 1) technology and found it interesting. We were glad with the offer as in those days we ourselves did not know much about human (monoclonal) antibodies and were concerned with how to hedge our alliance with CBI”* *(Ex Head of R&D)*. We noted a similar partner selection pattern with respect to selection and formation of India Biotech’s alliances with US DBF 2 for the development of oral insulin and with US DBF 3 to develop novel oncology bio-pharmaceutical drugs. Thus, perceived partner complementarity rather than partner compatibility or commitment was the predominant partner selection criterion adopted by India Biotech. Notwithstanding the criteria, the process of partner selection was straightforward and it entailed very limited evaluation of the partners’ capabilities. We identified India Biotech’s founder as the central actors in the process of partner selection. The founder was instrumental in pursuing strategic partnerships with international partners with an aim to achieve innovation outcomes for the company. In doing so, the company and its senior management team recognised that each strategic partnership provides an opportunity to explore new knowledge (for instance Mab based drugs) as well as to exploit existing fermentation skills based process development and manufacturing expertise (Im and Rai, 2008; Kaupilla, 2010; Lavie, Kang & Rosenkopf, 2011). Henece, in this respect, task complementarities and not partner specific compatibility underpinned the partner section rationale and process (Rothaermel & Deeds, 2004; Tempelaar & Rosenkranz, 2019).

## Negotiating contracts and designing governance structure

The alliance between India Biotech and US DBF 1 was established in 2004 and within five years the relationship between the partners deteriorated. US DBF1 could manage to deliver only two molecules instead of four as was agreed in the contractual agreement and one of the two molecules it delivered had structural defect, thus rendering it difficult to develop. As a result, India Biotech sought to renegotiate the agreement but US DBF1 declined. In investigating the contractual agreement, the previous Head of R&D, it had negotiated the agreement, found that what he had negotiated and agreed to in the draft document did not feature in the final contractual agreement. He informed us, *“to my surprise…the fine print in some of the clauses were not what I had discussed and agreed to…”* He particularly referred to the discrepancy regarding profit sharing and manufacturing rights of the co-developed products. According to him, *“*… *from the beginning I had insisted that we would have the manufacturing rights. Wherever the drugs are sold we will be the manufacturer and hence the sole supplier. Only the revenue from the sale of products was to be shared between us…not the profits from manufacturing…” (Ex Head of R&D)*. In this context, we sought to further understand the negotiation process and we came to know that the negotiation of the alliance including drafting of the contractual agreement was handled by the members of the R&D team with little or no input from the legal department. This also provides an interesting insight on the processes that underpinned how partners were selected and contractual agreements were arrived at, at least in respect to the first few alliances the company entered into. .

Learning from this experience with US DBF 1, the Senior Management Committee (SMC) of India Biotech proposed major structural and procedural changes on how the company would henceforth undertake negotiation and drafting of the contractual agreements. SMC proposed the following: (a) although the R&D department would continue to drive the alliance negotiation process, it has to do so in close interaction with the legal department; (b) the draft of any contractual agreement pertaining to a new alliance has to be approved by the SMC; and (c) creation of an expert group comprising members from various departments to undertake partner-specific technical due diligence before any formal negotiations is initiated with any potential alliance partner. This would enable an independent evaluation of potential partner’s technical capabilities. The suggestions, in essence, highlights the attempts of the SMC to exercise oversight and control over the negotiation process. Extant studies on international strategic partnerships highlight the importance of navigating the relationships through intercultural encounters (Malik, Ngo, & Kingshott, 2018) and in that context the contract negotiation and re-negotiation processes are prime examples of such encounters (Reuer & Arino, 2002). The emergence of new structures resulting from the experience with US Bio 1 is an illustration of developing structural ambidexterity by enhancing management practices (Raisch & Birkinshaw, 2008; Stokes, Liu, Smith, Leidner, Moore, & Rowland , 2015) by creating an independent multi-disciplinary team, to be directly involved in undertaking due diligence of partners’ technical capabilities (Heavey and Simsek, 2017). ..

## Managing post-formation alliance activities

Alliance scholars have emphasized the significance of managing post-formation dynamics as critical to attain value from an alliance (Ireland et al., 1998; Wang & Rajagopalan, 2015; Gomes et al., 2016). Post-formation challenges primarily involve adapting to and if needed undertaking re-negotiation and alteration of the alliance governing mechanisms, and (re) evaluating interpersonal relationships to facilitate smoother functioning of the alliance and transfer of knowledge and learning, resolution of resolving conflicts and overall functioning of the alliance (Lu, 2006; Faems et al., 2008; Arino et al., 2014; Kohtamaki et al., 2018). In our research, we find that post-formation activities entailed managing interpersonal relationships at multiple levels, including: (a) managing interpersonal relationships with members of partner organisations in the Alliance Management Team (AMT); and (b) managing the relationship with members of own organisation, including with those who have operational involvement. Managing these relationships are central to develop trust and address ambiguities that characterizes functioning in alliances (Kale and Singh, 2009; Kumar, 2014).

## Managing relationships in the AMTs

Alliance scholars have highlighted the importance of the AMTs in ensuring smooth functioning of alliances (e.g. Spekman et al., 1998; Ireland et al., 2000; Kale & Singh, 2009; Niesten & Jolink, 2015). The AMTs of all the four alliances in our study comprise of four members, with two members representing each of the two partners. One of the members of India Biotech’s BoDs was the company’s one of the representatives in the all the four AMTs. As a matter of policy, the incumbent Head of R&D at the time of alliance formation becomes one of the members of the AMTs. Interestingly the ex- Head of R&D and who had since then become one of the members of the company’s BoD, continued to represent India Biotech in the three alliances (with CBI, US DBF1 and US DBF2) that were formed during his tenure as Head of R&D. We note that the AMTs of all the four alliances used to have a face – to face meeting once every four months to take stock of the developments in their respective alliances and to preempt any potentially adverse developments. In specific context to the alliance with US DBF 1, which had turned contentious, the view within India Biotech was that the CEO of US DBF 1, *“ran the show…exerted too much influence on how the AMT functioned, what was discussed and used the discussions to shape the outcome he desired…”* *(Project Manager 1).* This reflection particularly pertained to the decision of the AMT to develop the two molecules US DBF1 managed to discover without any critical assessment or technical evaluation. According to one of the Project Managers, *“India Biotech - US DBF 1 (a) had faced great difficulty in discovering molecules for development…they came up with the two molecules after 18 months…Yet, without any evaluation they (AMT) decided to develop both of them…it was only later that we found that the molecule was structurally defective” (Project Manager 4).* Other respondents supported this assertion that one of the two molecules was defective and not suitable for further development. The following this experience with US DBF 1, India Biotech’s SMC proposed to make AMT members answerable to the SMC, which was not the case until then. The experience from the fall out with US Bio1, in essence, underpinned the need for India Biotech to undertake structural changes, so as to manage post formational activities more effectively. Put simply, the organisational processes, structures, cultures that were critical during the initial two phases of the company’s evolution, as depicted in Tables 3 and 4; were not suitable to manage inter-organizational relationships. Creation of new structures and processes to oversee the actions of its members in the AMTs was an illustration to balance tensions between the demands of inter-organisational relationships and maintaining intra-organisational control (Lavie, Stettner & Tushman, 2010; Contractor & Woodley, 2015; Heavey and Simsek, 2017).

## Managing relationships at the operational level

In their work, Faems et al. (2008) have highlighted how perspectives of operational teams differ from the view of the senior managers in a collaborative context. In this respect, managing the relationship between AMT representative and operational and project team members assumes significance. The role of the project managers in India Biotech was to provide *“day-to-day leadership”* in driving specific co-development projects taking place within the respective alliances. In most instances, India Biotech and its partners followed a general post-formation routine, which was that the *“(project teams) interact every month although time and content is not always fixed, particularly during the early stages. Research generally does not move very fast so essentially these meetings were about sharing information, keeping each other in the loop”* *(Project Manager 1).* This routine was central to take stock of the development of the discovery process (Zollo, Reuer & Singh, 2002; Lavie & Rosenkopf, 2006.)which being upstream activities took place at the partner’s end as well as facilitated interaction between members of the operational teams (Malik, Ngo & Kingshott, 2018).

## Managing relationship between the members of the AMT and Operation teams

In our interaction with the members of the operational teams, we note that although there was clear demarcation of the roles and responsibilities of India Biotech’s AMT representatives and the project managers involved in co-development projects within respective alliances, the communication between them was not at desired level. According to one of the project managers, although the AMT was envisaged and operated as *“the core decision making body….the representative could only take informed decision”* based on the inputs from the members of the operational / project teams. This arrangement was designed to ensure that the views and opinions of those involved at operational level are reflected in the strategic decisions made by the AMT. However, one of the common complaints pertained to how the suggestions of the operational / project managers were often overlooked by the representatives of the AMT. In this context, *Project Manager 4* pointed out, *“*…*before each AMT we had meetings within R&D and those of us involved in the projects would put forward some suggestions but I cannot say if the key issues were always taken up in the AMT meetings”*. The decision by the SMC to get involved *“as a sounding board before any AMT meeting”* was also to address this lack of communication between the representatives of the India Biotech’s AMT representatives and the operational team members.

When we visited the company in September 2009, as concluding part of our field study, India Biotech had only recently established an alliance with US DBF 3. Although some of the structures and processes in establishing and negotiating and drafting of the contractual agreements were followed as suggested by the SMC, it had not succeeded in establishing a multi-disciplinary team to undertake due-diligence or pre alliance evaluation of the partner. However, respondents informed us that following the emergence of new structures and processes, interaction between the operational teams and representatives in the AMTs had become more regular. The intersection between the representatives of the AMT and the SMC had also become institutionalized. The creation of these distributed leadership and team structures (Rao-Nicholson, 2016; Stokes, Liu, Smith, Leidner, Moore & Rowland, 2015) was a deliberate choice exercised by India Biotech’s senior management team Chang, 2015; Heavey & Simsek, 2017). Put simply, the structures in essence highlight the organisation’s attempt to balance several dualities, including developing trust and relationships at one end and yet exercise hierarchical control, as India Biotech’s strategic partnerships developed over time (Contractor & Woodley, 2015; Henderson, 1990). Overall, from a micro-foundational aspect different forms of leadership approaches: transformational, distributed and senior management team’s collective efforts enabled the creation of an ambidextrous context, which contributed to successful innovation outcomes of the firm.

# Conclusion

We began by noting that the current research stream on micro-foundations predominantly focuses on single organisations, whilst the role of micro-foundations in interorganisational relationships - such as cross-border strategic partnerships and their relationship to organisational performance - remains partial and relatively under-investigated (Angwin, Paroutis & Connell, 2015; Mäkelä, Andersson & Seppälä, 2012; Park & Harris, 2014; Paruchuri & Eisenman, 2012). Although as emphasized by Liu, Sarala, Xing, & Cooper (2017), the extant research on collaborative partnerships has, over a period of time, accumulated into a vast body of knowledge, which helps in better understanding of rather complex organisational phenomena, including mergers and acquisitions, strategic alliances, and joint ventures, there is limited insights on how organisations develop ambidextrous practices in such settings. Put simply, there is lack of studies that focus on exploring how EMNEs in particular engage in exploration and exploitation in inter-organisational context. Thus, by employing micro‐foundational lens to undertake a longitudinal study design of India Biotech, we have attempted to fill that lacuna. In the process, our paper generates novel insights of micro foundational aspects at play while examining the three intersecting literatures on organisational ambidexterity, strategic partnerships pursued by EMNEs and the role of leadership in managing the tensions inherent in such contexts for achieving innovation.

Our unique and revelatory case of India Biotech, a rapidly growing biopharma EMNE allows us to contribute in several ways. *First*, we show detailed evidence of the ambidextrous practices and behaviour as the EMNE pursues growth by integrating its exploratory and exploitative expertise over a period of thirty years. Tracing the evolution in three distinct phases, the first phase being the period between late 1970s till 1990, when the company embraced contextual ambidexterity to access, acquire and refine its fermentation still base. Thus, starting as a manufacturer and supplier of industrial enzymes, it aimed to become a manufacturer of APIs. In the second phase, between 1990s – beginning of 2000, it scaled up its fermentation skills base from laboratory to pilot to plant levels and became a trusted supplier of APIs to global pharmaceutical companies. At the same time, it sets its ambitions higher to become a biopharmaceutical company. In the third phase, from the beginning of the millennium it pursed forming strategic partnerships to explore new knowledge based on MAbs to co-develop new biopharmaceutical drugs and in the process it reevaluates and develops new structures and process to manage its strategic alliances. *Second*, we contribute to the debate on micro-foundations of ambidexterity in strategic partnerships, wherein there is equivocal evidence of the role of leadership. We contribute by specifically portraying the role and responsibility of leadership in supporting and creating the conditions of both ambidexterity dimensions to co-exist and complement *Third*, our analysis was able to give us insights into how R&D alliances were formed for exploratory purposes, alongside its existing strategy of exploiting its technological base. In the process, we were able to capture both contextual ambidexterity with organisational/structural ambidexterity to manage a growing number of international strategic alliances. *Fourth*, and last, but not least, our study fills the gap in the limited work on MNEs from emerging markets. More specially, when it comes to EMNEs industry specific cases, as the biopharma industry, needs much more engrained and complex analysis because this gives us an opportunity to unbundle the concepts and studies that involve innovation and R&D in the context of international strategic alliances. Further, in this context we contribute in a way as most existing studies are predominantly China specific with very few studies from India.

In terms of managerial implications of our study, we argue that organisational ambidexterity develops over a period of time and its evolutionary in its process. Our study highlights how the EMNE learned from its experience and re-created its structures to oversee and monitor pre- and post- formation alliance activities. Another area that managers can gain from this study is the positive output of being ambidexterity both organisation and contextual viewpoint. Lastly, managers can also gain when they can identify the positivity and encouragement of the senior leadership in creating an ambidexterity environment in the organisation. It is the managers who bring about success from their day to day operational level when it comes to being ambidexterity in nature.

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