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LEARNING FROM THE GIANTS: CRITICAL SUCCESS FACTORS FOR PHARMACEUTICAL EMNES FROM INDIA

ABSTRACT

Indian pharmaceutical EMNEs, with significant cost competitiveness, have the potential to partially address the vexing problems of global healthcare industry, including rising cost of the healthcare. In this context, we explore the Critical Success Factors (CSFs) of the pharmaceutical industry, which can help firms focus their resources sharply to break-out faster. Using case study method, we studied two global dominant firms for identifying industry CSFs. Product innovation capabilities emerged as the most important CSF, having the potential to provide competitive advantage for long-term competitiveness of the firms. Other two factors that emerged as CSFs are marketing capabilities and financial capabilities. The study contributes to the literature by linking the success factors to firm capabilities and also specifically to international business literature of EMNE capability building. The study also has implications to practitioners in strategic decision making.

Key Words: Innovation capabilities, Critical success factors (CSFs), International competitiveness, Emerging country multinational enterprises (EMNEs), India, Pharmaceutical Industry

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INTRODUCTION

High and rising cost of healthcare has been a concern for individuals, firms, other organisations as well as governments across countries (e.g., Porter, 1994). For instance, finding a solution for U.S. healthcare crisis has been a vexing problem for decades that has attracted massive research investments (e.g., Harvard) on questions such as: how to achieve significant and sustained cost reductions over time? What will it take to foster entirely new approaches to disease prevention and treatment, new ways to deliver services, and more cost-effective facilities?

With rapid growth of lifestyle diseases, such questions asked in context of the USA may become relevant for other countries as well, including other advanced countries (Bhat and Momaya, 2017). India, with significant cost competitiveness in several industries such as automotive, drugs and pharmaceuticals, software and space, may have approaches that address such questions world-wide. Pharmaceuticals is a R&D intensive and innovation-based industry with potential to partly address the vexing problem. India has emerged to be the 3rd largest producer of drugs by volume (India Brand Equity Foundation report, 2018) and many firms have started investing in R&D. The road ahead will demand building of many diverse capabilities in order to be able to compete with the incumbent multinational firms from advanced countries, also referred to as Advanced Country Multi-National Enterprises (AMNEs) (Bhat and Momaya, 2017). Some sense of Critical Success Factors (CSFs) of the industry (Momaya, 2011) can give direction to the multinationals from emerging countries, also referred to as Emerging Country Multi-National Enterprises (EMNEs), regarding which capabilities to invest in, among diverse needs. Correctly diagnosing an industry's CSFs or key success factors (KSFs) raises a company's chances of crafting a sound strategy (Thompson, Strickland, Gamble, and Jain, 2006). The strategy incorporates the intent to stack up well on all of the industry's CSFs and to excel on one or two in particular. Competitive advantage may become possible, when a company becomes distinctly better than rivals, particularly on CSF that shape future competitive success.

Understanding of such CSF may be more useful for EMNEs, as they are often latecomers, and have limited resources and time to ensure success. EMNEs are catching up with AMNEs, but gaps between them seem to be vast. Awate, Larsen, and Mudambi (2012), explained such phenomenon by distinguishing between output and innovation capabilities. While in some industries EMNEs from select countries have successfully caught-up with

AMNEs (e.g., Samsung, Hyundai), the gaps seem vast for pharmaceutical EMNEs from India, who can contribute to address above vexing problem through catch-up on critical capabilities. They can start focusing on building capabilities related to factors of competitiveness (Momaya, 2001) that are enablers of success in present scenario or for future challenges. We focus on finding such CSFs of EMNEs in context of pharmaceutical industry in this study.

Indian pharmaceutical industry is a crucial knowledge intensive industry, which has internationalized significantly, based on the cost advantage (Chittoor, Sarkar, Ray and Aulakh, 2009). Industry has a high growth rate currently, but time may not be far for it to lose its competitive advantage because of competition from other low-cost countries. If India has to sustain its competitive advantage, it is important that at least some of the focal firms (Momaya, 2016) strive to become world-class companies. There have been considerable attempts in this regard by firms such as Sun Pharma, Dr. Reddy's Laboratories (DRL) and Biocon, yet Indian firms have a long way to go to be able to be included in the league of giants such as Novartis, Pfizer and Roche. Also, being globally ranked 3rd in volume and 14th in terms of value clearly indicates the gap in the industry competitiveness. In this context, understanding CSFs of this industry can be of great value for not only achieving international competitiveness but also for the focal Indian pharmaceutical firms to progress on journey to be world-class companies.

In this context, we try to identify different categories of CSFs for focal pharma firms keen to break-out on next levels of ladder of international competitiveness (e.g., Momaya, 2014), based on the cases of two dominant focal firms. The focal firms are those few firms with capabilities to shape the local or international value chains or networks of the industry to ensure profitable growth and sustainability (Momaya, 2016).

The rest of the paper is organised as follows. The next section covers brief literature review on critical success factors and international competitiveness. It is followed by the sections on data and methodology, identification of critical success factors, discussion, and conclusion which includes the implications, limitations, and areas for further research.

LITERATURE REVIEW

Extensive literature has been reviewed, but only core ideas are discussed briefly below in two sections.

Critical success factors

The concept of 'success factors' was developed by D. Ronald Daniel of McKinsey & Company in 1961. The process was refined into Critical Success Factors by Rockart (1979) and he defined them as "*For any business, the limited number of areas in which results, if they are satisfactory, will insure successful competitive performance for the organization. They are the few key areas where 'things must go right' for the business to flourish. If results in these areas are not adequate, the organization's efforts for the period will be less than defined."*

Freund (1988) explained that CSFs must be:

- Important to achieving overall corporate goals and objectives
- Measurable and controllable by the organization to which they apply
- Relatively few in number—not everything can be critical
- Expressed as things that must be done—not the end point of the process
- Applicable to all companies in the industry with similar objectives and strategies
- Hierarchical in nature— CSFs can be defined for an industry, a firm, a business unit, a functional unit and also for a particular project.

Leidecker and Bruno (1984), focused on techniques for identification of CSFs of a particular industry and put forward eight important techniques which are, environmental analysis, industry structure analysis, inputs from industry/business experts, analysis of competition, analysis of dominant firms in the industry, company (firm specific) assessment, intuitive factors (firm specific) and Profit Impact of Market Strategy (PIMS) analysis.

In the context of pharmaceutical industry, Wilson and Robert (2001) analyzed the CSFs associated with the product strategies and in turn with the innovation of the industry by taking the cases of two firms, one of which had mainly the breakthrough products in its portfolio and the other firm had more of late entrant products. After identifying CSFs involved with both the product strategies, they drew three common generic CSFs for innovation which are, performance measurement, innovation organization and product life cycle management. This analysis was done in the context of the U.S pharmaceutical industry,

however, there have been not many studies on CSFs of the emerging pharma multinationals, particularly Indian pharmaceuticals.

More recently, concept of CSF was leveraged to evolve success factors of country competitiveness in an emerging industry of nanotechnology (Momaya, 2011), that promises to shape many industries across the continua, from mature to future. CSF was used to evolve few high-potential factors of competitiveness, the most important building block from large number of criteria. Such application of CSF has been very popular in industry and may become increasingly useful in research.

International competitiveness

Among alternate theories and models of international competitiveness, one by Porter and associates (Porter, 1990) are most influential. The double diamond model (Rugman and D'Cruz, 1993) tried to incorporate multinational activities. Extension by human factors (e.g., Cho, 1994) evolved into new comprehensive model that was tested to measure competitiveness of countries (e.g., Cho, Moon, and Yin, 2016). Recognizing linkages among three levels of competitiveness, i.e., firm, industry and country, Bhawsar and Chattopadhyay (2015), reconfirm the importance of firms as a root or source of creation of economic value and competitiveness.

Alternate frameworks are emerging to address the needs of modern era and contexts. Efforts by Momaya helped evolve Assets-Processes-Performance (APP) framework of competitiveness, that was tested in the context of select industries in select countries (e.g., Canada, Japan, and the US; Momaya, 1998). The APP framework provided interesting insights in context of emerging industries where firms of Indian origin could climb to some levels on value curve (e.g., for software; Banwet, Momaya and Shee, 2003; Ambastha and Momaya, 2004; For nanotech; Momaya, 2011). Based on years of experience with alternate models, Moon (2012) proposed an innovative ABCD model and illustrated how the Korean corporations and people have exemplified these factors to achieve competitiveness. The model has been applied to analyse the growth strategy at business group level (e.g., Tata Group; Moon, Lee, and Yin, 2015). Pharma industry in India seems to have leveraged basic assets, process innovation and some facets of double-diamond (e.g., with the US to compete in generics) to grow, but need to find success factors for next levels on value curve or value pyramid (Umamaheswari and Momaya, 2008). Cooperative strategies for innovation were

explored taking case of biopharma in light of enormous potential (e.g. Momaya, 2008), but progress seems very slow and at lower segments of value curve.

In light of the context of Indian pharmaceutical EMNEs and literature reviewed above, we explore following research question (RQ) in this study:

RQ: What are the critical success factors for the catch-up of the EMNEs in pharmaceutical industry?

Next section covers the methodology of the study.

DATA AND METHODOLOGY

We adapt comparative case study method, which is considered to be one of the suitable methods for studying CSFs (Amberg, Fischl and Wiener, 2005). In order to select the countries and firms, we took the sample of pharmaceutical firms ranked in the Global 2000 (G2000) list by Forbes in 2009 and 2019, segregated them country-wise and compared them based on various factors (Table 1). Among 44 and 41 firms included in 2009 and 2019 respectively, the US and Japan seem to be dominating in terms of number of firms included. However, firms from Japan have significantly lesser revenue and profit contribution compared to the US, indicating that the firms from US are considerably bigger in size and in turn more dominant in the industry. Also, reduction in number of US firms from 23 to 11 indicates that the industry is consolidating rapidly. On the other hand, firms from Switzerland, although only 2 and 3 firms are included in the list in 2009 and 2019 respectively, are highly profitable, indicting their superior capabilities and competitiveness. The US dominated in terms of numbers and the size whereas Switzerland is demonstrating polarity to US by producing highly profitable firms. We shortlisted the US and Switzerland and selected the top ranked firm from each country in 2019, that is Novartis from Switzerland and Pfizer from the the US as our sample firms. These two firms were studied in depth in order to identify critical success factors that may have helped them achieve higher positions on stages of international competitiveness.

The study uses the archival data of the firms such as data from company documents including annual reports, investor presentations and public documents such as academic cases on two firms, news articles, analyst reports etc.

Table 1. Pharmaceutical firms from G2000 ranking (2009 and 2019)

Countries	No. of Companies		Average Revenue (billion USD)		Average Profit (billion USD)		% Revenue Contribution		% Profit Contribution	
	2009	2019	2009	2019	2009	2019	2009	2019	2009	2019
Australia	1	-	3.4	-	0.67	-	0.4	-	0.67	-
Belgium	1	1	4.65	5.5	0.23	0.93	0.55	0.43	0.23	1.19
Canada	-	1		8.4	-	-4.3	-	0.66	-	-5.49
China	-	5		13.96	-	0.66	-	5.52	-	4.2
Denmark	3	2	4.05	10.3	0.76	3.36	1.43	1.63	2.28	8.58
France	1	2	38.4	21.65	5.36	2.78	4.51	3.42	5.36	7.10
Germany	1	-	10.53	-	0.51	-	1.24	-	0.51	-
Hong Kong	-	1		24.2	-	0.52	-	1.91	-	0.66
India	1	2	0.82	3.0	0.37	0.6	0.1	0.47	0.37	1.54
Ireland	-	1		15.8	-	-5.1	-	1.25	-	-6.51
Israel	1	1	10.36	18.8	0.59	-2.3	1.22	1.49	0.59	-2.94
Japan	7	9	6.55	14.28	1	0.77	5.39	10.15	7.01	8.81
Switzerland	3	2	28.72	55	5.67	11.65	10.13	8.69	17.02	29.74
United Kingdom	3	3	23.19	25.47	4.31	2.45	8.18	6.04	12.94	9.39
United States	23	11	24.73	67.1	2.3	3.12	66.87	58.33	53.01	43.74
Total	44	41	14.13	21.8	1.98	1.16	100	100	100	100

Source: Global 2000, Forbes

IDENTIFICATION OF CRITICAL SUCCESS FACTORS FROM NOVARTIS AND PFIZER

Brief introduction of the case firms

Details of the journey of Novartis and Pfizer have been compiled based on the information from their respective websites as well as two academic cases (For Novartis, refer to Goerge, Palepu, and Knoop, 2014; For Pfizer, refer to Thomke and Nimgade, 2008).

Novartis

Novartis came into existence as one of the largest healthcare companies in 1996 with the merger of Sandoz and Ciba-Geigy. Its business consisted of three main divisions: healthcare

(59% of sales), agribusiness (28%) and nutrition (13%). The chemical business was spun-off as Ciba Specialty Chemicals. In 2002, Novartis established Novartis Institute of Biomedical Research (NIBR) in Cambridge, United States, followed by Biomedical R&D center in Shanghai in 2006. In 2010, it acquired majority stakes in Alcon Inc. and emerged to be a world leader in Eyecare. In 2015 Novartis restructured its business into three main units namely innovative medicines, Alocon (eye care) and Sandoz (generic medicines). In April 2019, Novartis spun-off Sandoz as a separate stand-alone company, in order to focus on and strengthen the innovative medicine unit.

Pfizer

Pfizer came into existence in 1849 producing drugs such as of camphor and citric acid. It achieved breakthrough during World War II when it discovered how to mass-manufacture penicillin. In 1960, Pfizer established its R&D centre in Groton, USA. Breaking the industry-wide research-slashing trend in 1970s and 1980s, Pfizer boosted its R&D investment from 5% to 15% of the sales. This move yielded blockbusters in various therapeutic areas including cardiology and psychiatry and Pfizer moved to the forefront of the industry. Pfizer became the largest drug manufacturer in the world in 2000, by acquiring Warner-Lambert. It also established a new R&D centre in Cambridge and named it research and Technology Centre (RTC). In 2013, Pfizer decided to create a separate, internal, global innovative and value business unit in order to strengthen the focus on R&D.

Identification of critical success factors

In order to identify the CSFs, we followed the approach proposed by Thompson et al. (2006). They list six common types of CSFs, which they refer to as industry KSFs, which are technology related, manufacturing related, distribution-related, marketing related, skills and capability related and other types of KSFs. We tried to understand CSFs of the two firms by looking into these six areas. Given the knowledge intensive nature of pharmaceutical industry, product innovation capability emerged as the most important CSF in both the firms. Top managements of Pfizer and Novartis frequently spoke about how important bringing out novel drugs, especially breakthrough drugs, is for the company's long-term competitiveness. Company documents such as annual reports, press releases and investor presentations emphasized drug pipelines, platforms and other R&D efforts. Apart from product innovation, we identified other capabilities and selected two CSFs, namely

marketing capabilities and financial capabilities, that seemed to have played an important role in the success of Novartis and Pfizer. A summary of the role of each CSF in both the firms is given in Table 2. We did not find strong references to manufacturing, distribution or any other capabilities in the data. As manufacturing capability is the basic capability for a manufacturing pharmaceutical firm irrespective of the value segment it's operating in, it's not surprising that the highly innovative firms like Novartis and Pfizer don't talk much about manufacturing capabilities. Distribution capabilities were not explicitly stated as critical, although, a part of distribution expenditure, such as investment in a large sales team is captured under marketing capabilities.

To understand how similar and distinct are Novartis and Pfizer on CSFs, we compare them on various criteria related to the factors. Criteria for measuring three capabilities, namely product innovation, marketing and financial, are selected from the literature (refer to Table 3) and the firms are compared based on the criteria using longitudinal data from 2009 to 2018. We tried to understand the dynamics of the CSFs in both the firms by drawing inferences on their efforts in building all three capabilities over the decade.

Table 2. Critical success factors of the pharmaceutical industry

Critical Success Factors	Capabilities/Processes of Novartis	Capabilities/Processes of Pfizer
Product Innovation Capabilities	Ability to launch more products than competitors on an average. (e.g., Company developed a larger pipeline and lunched a new product every hundred days from 2000 to 2003, when other leading firms were launching only one product per year on an average). Ability to attract the best talents in the industry	Autonomy and financial support for the R&D process affording higher cost and high risk. Higher focus on high risk high potential blue sky research Ability to attract the best talents in the industry
Marketing Capabilities	Novartis doesn't emphasize marketing efforts explicitly and believes in investing rather in R&D. For example, in 1999, Novartis decided to shift marketing resources to their key products instead. However, their spend on marketing and sales are higher than R&D budget and as high as that of Pfizer's.	Two of the key efforts of Pfizer in marketing are, 1. They built the largest sales force in the world with 20,000 employees with twice the budget of R&D in 1990s. 2. Prioritization of offshore aggressive marketing for expansion and growth
Financial Capabilities	Financial ability to invest heavily on R&D affording higher costs and higher risk.	Financial capability to build largest sales force in the world with 20,000 employees with twice the budget of R&D.

(Source: Developed based on two academic cases on companies, annual reports and archival data)

Table 3. Definitions, criteria and select literature support for critical success factors

Critical success factors	Definition	Select criteria of factors	Select literature support for criteria
Product Innovation Capabilities	Innovation capabilities include: (1) the capacity of developing new products satisfying market needs; (2) the capacity of applying appropriate process technologies to produce these new products; (3) the capacity of developing and adopting new product and processing technologies to satisfy the future needs; and (4) the capacity of responding to accidental technology activities and unexpected opportunities created by competitors. (Adler and Shenbar, 1990)	R&D intensity Skilled human resources Patents filled / published Patent Citations New product launches Revenue from new products Innovation (R&D) efficiency Innovation (R&D) quality	Yeoh and Roth (1999), Artz, Norman, Hatfield and Cardinal (2010), Oura, Zilber and Lopes (2016), Rautiainen (2001), Sher and Yang (2005), Hall and Bagchi-Sen, 2002, Burhan, Singh and Jain, 2017, Chen and Chang, 2010, Wagner and Wakeman, 2016, Artz et al. (2010), Sok, O'Cass and Sok (2013)
Marketing Capabilities	"The integrative processes designed to apply collective knowledge, skills and resources of the firm to market-related needs of the business, enabling the business to add value to its goods and services, adapt to market conditions, take advantage of market opportunities and meet competitive threats" (Vorhies, 1998)	Marketing Expenses Sales Force Distribution Network	Yeoh and Roth (1999), Guan and Ma (2003), Yeh-Yun Lin and Yi-Ching Chen (2007), Yam et al. (2011), Oura et al. (2016)
Financial Capabilities	Ability of the firm to meet its short-term and long-term expenses and accomplish long-term expansion and growth both domestically and internationally	Net Profit Net Forex Earnings Reserves Financial Slack	Hult et al. (2004), Ashwin, Krishnan and George (2016), Gunday et al (2011), Sok et al (2013)

Source: Compiled by authors based on extant literature

Novartis and Pfizer are compared based on the criteria related to three capabilities that are identified as CSFs.

Product innovation capabilities

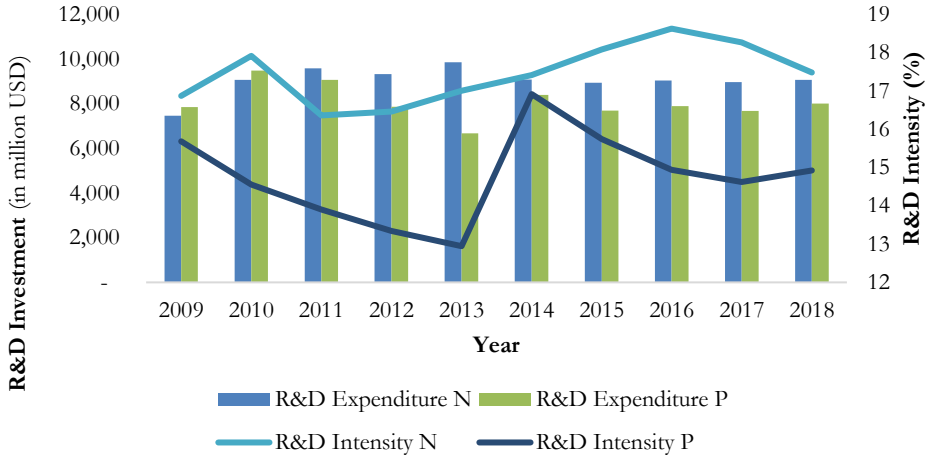
Product innovation capability is one of the most important factors—that both Novartis and Pfizer invest significant time and resources in, for achieving superior competitiveness. We started by comparing product innovation capabilities of both the firms on select criteria from Table 3, however, due to unavailability of data, we couldn't compare them on all the listed criteria. With regard to R&D efforts of the firms, Novartis seems to be consistently investing higher compared to Pfizer and their R&D intensity (R&D investment to total sales, in percentage terms) is consistently higher between 2009 and 2018 (Figure 1). This indicates the higher commitment from Novartis for innovation, given that both the firms are comparable in terms of size. Novartis also is considerably more committed in filing patents (as compared to Pfizer) and as a result has received higher forward citations on its patents (Figure 2). The number of patent citations constitutes the total number of forward citations received on all the patents published in a particular year, because of which the count of citations received goes on decreasing from 2009 to 2018. However, forward citation counts are compared between the two firms and Novartis seems to be ahead of Pfizer.

Figure 3 represents innovation efficiency and innovation quality of the two firms, which we calculated using the following formulas.

- Innovation Efficiency = Total number of patents published by the firm in a given year/ total sale of the year in USD 100 million
- Innovation Quality = Total forward citations received by all the patents filed in a given year / Total number of patents published in that year

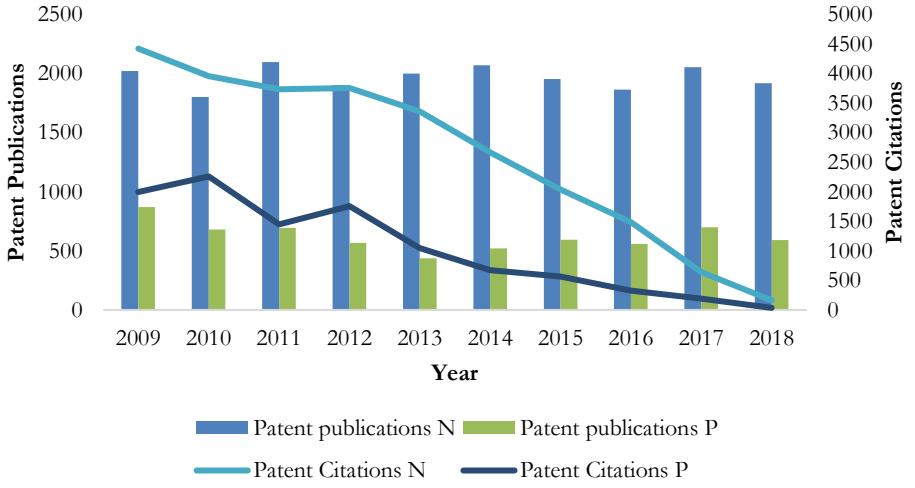
Innovation efficiency of Novartis is considerably higher than Pfizer given the fact that their patent filings are higher. However, in terms of innovation quality, which is average forward citations received per patent, Novartis seems to be catching up considerably with Pfizer and the best research outputs of Pfizer seem to have come in the earlier years of the decade.

Figure 1. Longitudinal patterns related to R&D for Novartis (N) and Pfizer (P)



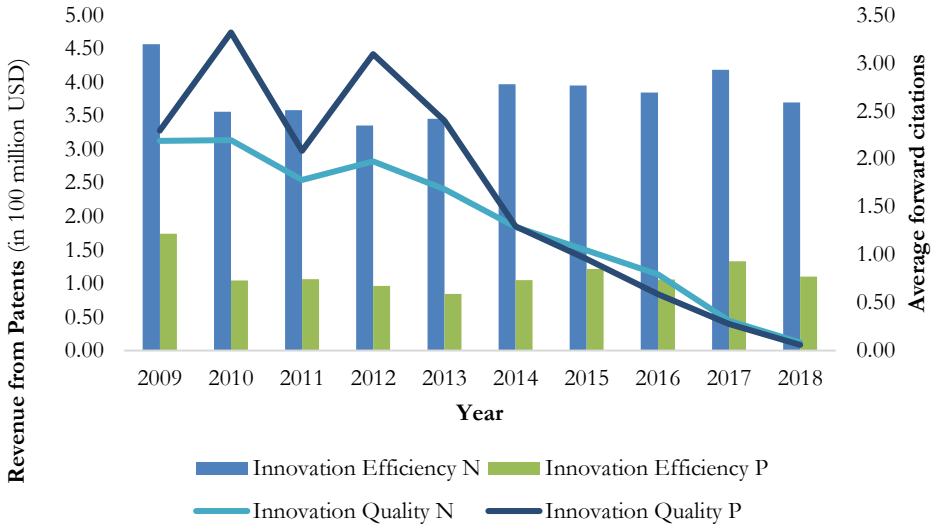
Source: Company annual reports

Figure 2. Longitudinal patterns related to patents for Novartis (N) and Pfizer (P)



Source: Company annual reports and Lens.org for patents

Figure 3. Longitudinal patterns related to innovation for Novartis (N) and Pfizer (P)



Source: Company annual reports and Lens.org for patents

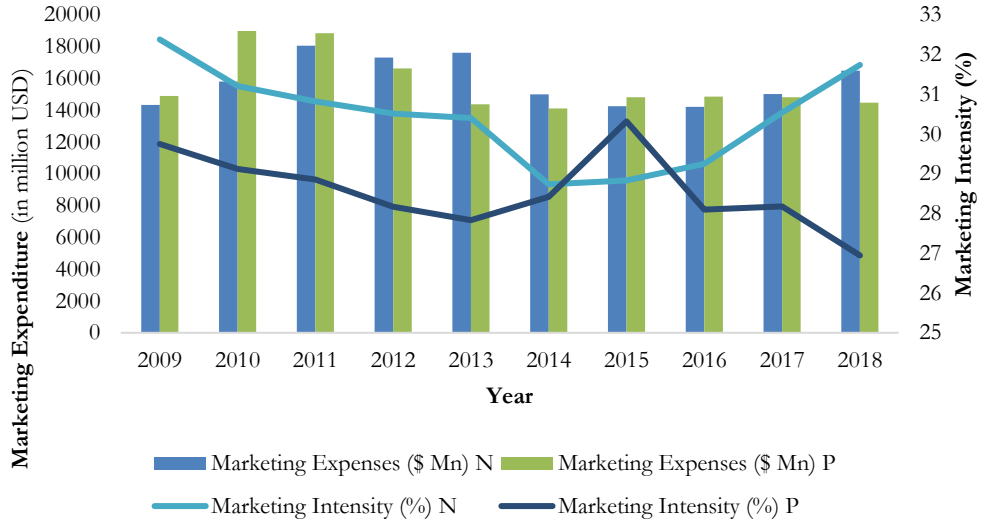
Marketing capabilities

Pfizer considers marketing efforts to be one of the key areas of investment and a critical factor to their success, whereas Novartis has not explicitly placed importance to their sales and marketing efforts in their public documents. However, both the firms spend almost equal amounts in sales and marketing (Figure 4), the amount that is almost as twice as their R&D budget. While Novartis seems to increasing their spend over the years, Pfizer's sales and marketing spend seems to be stagnating. This could indicate the increasing efforts of Novartis to foray into different countries and increasing importance given to reaching different markets. We use marketing intensity as an indicator of marketing capability (Figure 4) that's calculated by the below formula and is represented in Figure 4.

- Marketing intensity = Firm's spend on marketing related activities in a given year*100 / Total sales of the firm in that year

Novartis seems to be more aggressive in terms of marketing efforts, as indicated by marketing intensity.

Figure 4. Longitudinal trends related to marketing for Novartis (N) and Pfizer (P)



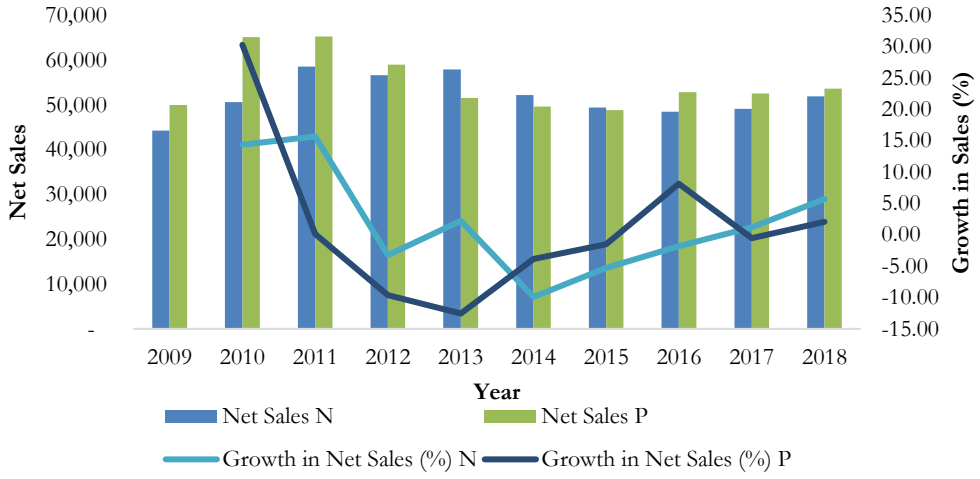
Source: Company annual reports

Financial capabilities

Financial capability provides the ability to the firm to manage expenses in short-term and invest in strategic initiatives including capability building, expansion by acquisition etc. While reserves provide long-term sources of financial resources, financial slack (current ratio) provides liquidity for short-term commitments (Figure 7). On the other hand, forex earnings help in international growth and expansion. Comparing Novartis and Pfizer in terms of total sales, both the firms have been competing neck-to-neck and both the firms have experienced a downfall between 2012 and 2015 (Figure 5). Their profit margins have also been fluctuating over the years, indicating that the external factors are playing an important role in industry dynamics (Figure 6). In terms of forex earnings, Novartis, with a small domestic market, depends heavily on foreign markets and draws close to 98% revenue

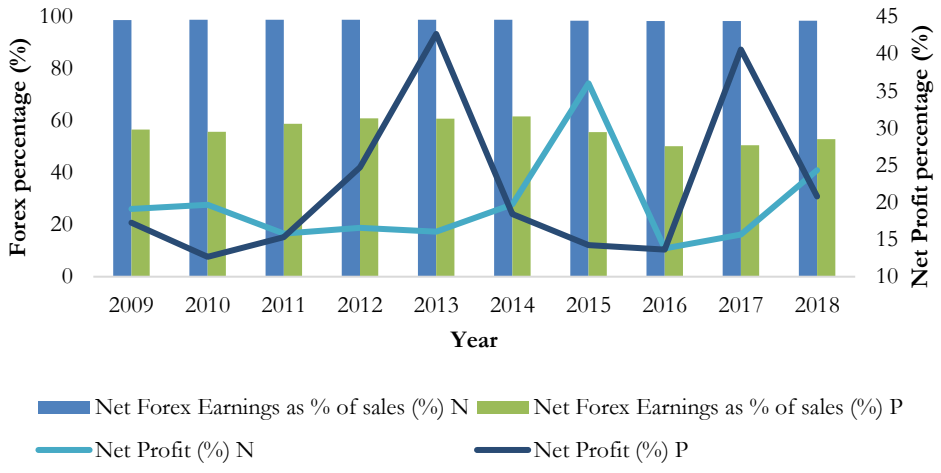
from outside home country. Pfizer on the other hand, with a huge domestic market, generates around 55-60% revenue from foreign sales (Figure 6).

Figure 5. Longitudinal trends related to sales for Novartis (N) and Pfizer (P)



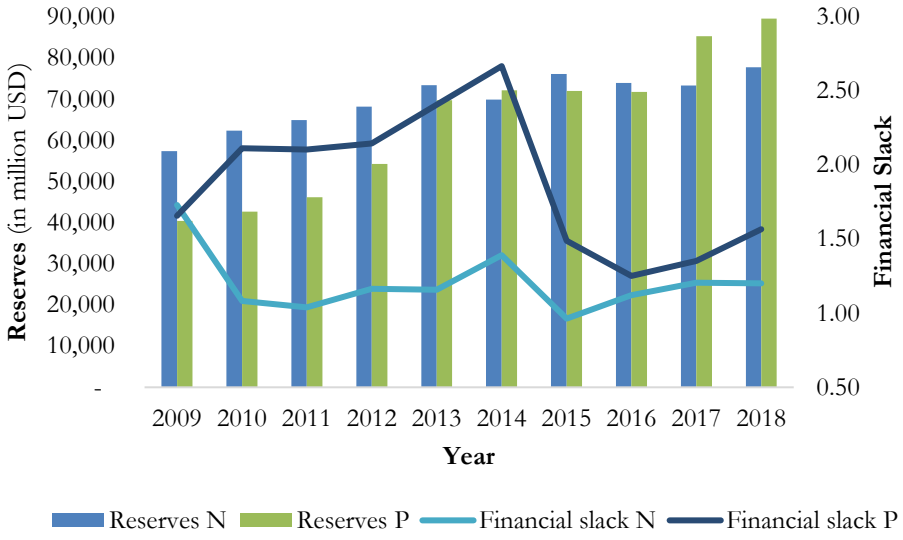
Source: Company annual reports

Figure 6. Longitudinal trends related to forex earnings and net profit of Novartis (N) and Pfizer (P)



Source: Company annual reports

Figure 7. Longitudinal trends related to reserves and financial slack of Novartis (N) and Pfizer (P)



Source: Company annual reports

Based on the comparative analysis of Novartis and Pfizer on select criteria of CSFs, the next section discusses important inferences and their relevance for catch-up of Indian pharmaceutical EMNEs.

DISCUSSION

Product innovation capability emerged as the most important critical success factor, with both the companies making sure their R&D investment doesn't suffer even in difficult times. Both the firms have set up their R&D centres in Cambridge, for better access to talents. On the other hand, although Indian pharmaceutical firms do pursue innovation, their capabilities are mostly limited to generic medicines. Past studies have shown that many firms in India are imitative and they have not pursued any risky or radical innovation. They lack linkages with governments, international funding agencies and other firms, which may prevent them from having significant long term impact on global markets (Chaturvedi,

Chataway and Wield, 2007). Study by Mishra (2010) reveals that although Patent Act, 2005 has led to increase in R&D expenditure of the pharmaceutical firms, it hasn't led to proportionate increase in their innovations. According to this study, half of the firms didn't carry out R&D activities and their R&D spend depends on their size and exports. Dubey and Dubey (2010) stated that despite increase in their R&D spending, there is no substantial increase in drug pipeline or New Molecular Entities (NMEs) though there is increase in application for Abbreviated New Drug Approvals (ANDAs) that are filed for generics. In this regard, Indian pharmaceutical companies when compared to international giants have tremendous scope to catch-up, however, the process has been slow. After the Patent Act, 1970 that abolished product patents in India and gave a boost to generic drug manufacturing, Indian firms have shown impressive growth and expansion in both domestic and international markets. However, the pharmaceutical exports are still at USD 19.2 billion as of March 2019 (CMIE industry outlook), compared to Information Technology (IT) industry, another highly export oriented, knowledge-intensive industry, which is close to USD 137 billion. In this regard, a deeper enquiry into the reasons behind the slow catch-up of Indian firms is needed. For example, there is a visible difference in terms of R&D investment, wherein large Indian firms on an average spend 7-10% of their revenue in R&D compared to 14-20% by Novartis, Pfizer and firms alike.

Balancing short-term investments and long-term strategic momentum can be a more specific CSF in context of higher segments of the value curve. This is poignantly illustrated in the pharma industry, where high project failure rates, long product development cycles, and over-reliance on patent protection can cause a firm to suddenly find it has a devastating gap in its product pipeline. Schilling and Shankar (2019) advocated judicious use of tool such as "The Project Map" so that gaps in "Breakthrough Projects" or "Advanced R&D Projects" can be detected early. Pharma firms from India are too small to have faced such issues of international giants (such as patent cliff). They are often on the other side of table with generics, but need to think differently about the vexing problems they have been facing for half a century, which we captured in a phenomenon. A preliminary root cause analysis for the phenomenon of 'slow break-out of Indian pharmaceutical firms in higher stages of innovation capabilities' (Bhat and Momaya, 2017) has been given in Appendix A. The analysis indicated several internal and external factors that may be responsible for the slow break-out. While the issue of institutional voids is a concern, the analysis indicated that the internal factors of the firms relating to the orientation of the top management, resources

and R&D related factors could be the primary reasons. For further details, refer to Appendix A.

Marketing expenses for Indian pharmaceutical firms range anywhere between 2-5% compared to 25-35% invested by firms like Novartis and Pfizer, which is a vast difference. While the main reason could be the difference in the cost of human resources, the extent of difference indicates the gap in marketing capabilities. Since reaching the customers is one of the most important functions of the business, especially international customers in the context of Indian firms, it's important that they build on their capabilities. Similarly, gap in financial capabilities between case firms and Indian firms is vast because of the differences in factors like size, age etc. For instance, while Novartis is a USD52 billion company, the largest pharmaceutical firm in India, Sun Pharma is a USD 4.2 billion company as of 2019. The gap is equaly vast in terms of other financial indicators such as profit, exports etc. However forex earnings of the large Indian firms stands at 50-60% of their sales on an average, which is the resultant of their higher exports, is comparable with the international giants.

Other facets of diamond such as "related and supporting industries" were also explored to identify potential critical success factors, but strong evidence was not found in comparative cases. Factors such as international R&D networks, cooperative strategies (Momaya, 2011; Momaya, 2016) with focal firms in related and supporting industries (e.g. digital platform firms such as Apple or Google that can amass massive data about customers that can be of value to players in healthcare) may emerge to be CSF in higher segments of value curve in future.

For Indian pharmaceutical EMNEs, success has been historically credited largely to policy, demography, low-cost resources and other macro environmental changes in India as well as in target markets rather than their internal capabilities. Hence, as the external advantages fade away and internal capabilities become increasingly important, it is crucial that they pay higher attention to the CSFs. In particular, innovation capabilities, which can be a potential source of sustainable competitive advantage may become increasingly important. In this scenario, identification and in-depth analysis of specific innovation capability related factors could be a potential area of research.

CONCLUSION

The study contributes to the literature on CSF by studying industry level CSFs, which is less explored. It also contributes to the body of literature on industry context by contextualizing the concept of CSF in one industry with greater depth. The study also contributes to the theory by linking the success factors to the firm capabilities, which is less explicit in extant literature. The study also contributes to the international business theory on EMNE capability building. In practice, the findings can help managers in strategic decision making regarding capability building in pharmaceutical EMNEs. As majority of the Indian pharmaceutical EMNEs pursue less innovative generic drug production, the study indicates that the top management needs to pay attention to building higher innovation capabilities for long-term competitiveness of the firms in the international market.

Our study is not free from limitations. Study on identification of critical success factors has the scope to draw from other sources of data like firm analyst reports from third parties and most importantly by interaction with industry experts. More cases can be adopted for deeper analysis of the industry and also firms at different stages in their life cycle can be chosen for comparative analysis.

The study provides scope for several future areas of research. Efficient processes of production, Management of Technology (MoT), Human Resorce Management (HRM), financing, marketing can be very important in some contexts as suggested by core literature on competitiveness (e.g. the ABCD Model; Moon, 2016). Manufacturing capabilities are critical for cost competitiveness in lower segments of value curve. There are significant opportunities to climb up on maturity of manufacturing excellence, building on areas identified by Deshmukh (2016) and Kulkarni, Verma, and Mukundan (2016). Manufacturing competitiveness to increase exports to advanced countries can provide high-potential areas of research. CSFs of the pharmaceutical industry, particularly higher segments on value curve (e.g., Umamaheswari and Momaya, 2008) can be empirically tested in the Indian context. This may give a better direction to Indian firms particularly the focal firms in crafting and executing their strategies (e.g., Thompson et al., 2006) and building capabilities for not only competing in the international market but also becoming world class companies by successfully climbing up the value curve. An effort to link generic functional CSFs (e.g., marketing, financial) with a specific CSF related to specific innovation capabilities (e.g., product innovation) can be an interesting area for further research, which may provide better insights by studying the interactions among the CSFs. Most importantly,

there is a need to focus on the underlying processes that build capabilities, which is highly crucial for firm competitiveness (Moon, 2012). Studying the processes (e.g., Yin, Moon, and Lee, 2019) can help researchers understand how EMNEs can actually go about building CSFs.

To summarize, in this study, we identified the critical success factors for the catch-up of pharmaceutical EMNEs from India by taking case of two dominant firms of the industry, namely Novartis and Pfizer. We identified three major CSFs by studying the two firms, which are product innovation capabilities, marketing capabilities and financial capabilities. Among the three, product innovation capabilities emerged as the most important CSF for achieving a long-term competitive advantage and we argue that the pharmaceutical MNEs should invest in building relevant innovation capabilities to climb to higher stages of international competitiveness.

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APPENDIX

A. Root Cause Analysis for the phenomenon of *'Slow break-out of Indian pharmaceutical firms in higher stages of innovation capabilities'*

Figure A: Actor-based root cause analysis