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## WORKING PAPER SERIES

**Indian multinationals in the automotive and the pharmaceutical sectors:  
competitive advantages and strategies**

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## **Indian multinationals in the automotive and the pharmaceutical sectors: competitive advantages and strategies \*\***

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Multinational companies (MNCs) from emerging markets (EMs) are new and very dynamic actors on the global scene.

Starting from the late 1970s a strand of literature flourished on Third World multinationals (Lall, 1983a). More recently, the increasing expansion abroad by multinationals based in the emerging countries, targeting also OECD countries, led scholars to take again an interest in the subject. (Goldstein, 2006). Some contributions called for a re-thinking of the conventional wisdom concerning foreign direct investment (FDI) (Mathews, 2002). These new trends have also given rise to protectionist reactions, extended to multinational production.

India represents an emerging country whose recent performance in terms of outward FDI has been noteworthy.

Following a case study methodology, this chapter aims at illustrating the internationalization process of four Indian companies operating in two sectors highly representative of the Indian successful entry on the global market<sup>1</sup>: the automotive and the pharmaceutical industry.

We focus our attention on what kind of ownership advantages (if any) the case study firms possess, what role their ability in establishing linkages with third parties and

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<sup>1</sup> So for instance out of 100 companies based in the “rapidly developing economies” that are “at the leading edge of globalizing their businesses” (Boston Consulting Group, 2006: 7) 20 are Indian, and out of them 5 are in the automotive and 3 in the pharmaceutical sector.

leveraging resources plays, what the motivations driving this process are. In so doing, we try to assess whether the process in question calls for an interpretation complementary to the conventional one, or whether a new theory is needed.

**Key words:** multinational corporations; India; automotive industry; pharmaceutical industry

**Jel codes:** F21, F23, O32, L62, L65.

## **1 Theoretical frameworks: how can we explain developing country multinationals ?**

Our first step will be to survey the relevant literature on EM multinationals, in order to focus on their main hypotheses and interpretative frameworks. Starting from our own approach, proposed at the conclusion of the survey, we will formulate our research questions.

### **1.1. Third world multinationals and the product life cycle**

Starting from the late 1970s, a flourishing literature was produced on Third World, developing or less developed country (LDC) multinationals. In particular three main theoretical approaches were used to interpret this phenomenon: the product life cycle; the localized technological change theory and the theory of technological accumulation; and finally the investment development cycle coupled with the eclectic paradigm of international production.

The possibility of looking at LDC outward FDI through the theoretical framework of the product life cycle PLC (Vernon, 1966) was upheld by the initiator himself of this theory, Raymond Vernon. At the end of the 1970s this scholar acknowledged that the PLC model had lost part of its power in explaining FDI among industrialized countries (Vernon, 1979). At the same time Vernon however maintained that the model could still be applied to the FDI undertaken by LDCs. In particular, firms “in the more rapidly industrializing group (...) are demonstrating a considerable

capability for producing innovations that respond to the special conditions of their own economies”. (ibidem: 266).

L.T. Wells (Wells, 1977; Wells 1981; Wells 1983) and D.J. Lecraw (1977, 1981) followed this approach in dealing with the LDC FDI phenomenon. Wells argued that some LDC firms carry out foreign investments to other developing countries, mainly exploiting their skill in imitating and adapting to the local conditions both the product and the process innovations developed by industrialised country firms. Wells stresses in particular LDC firms’ ability in adapting “large scale technologies of the industrialized countries for manufacture at small scale in their home countries” (Wells, 1983: 138) .

Wells’ approach does not seem to mirror the empirical evidence concerning today’s non-negligible flows of FDI from EMs, oriented to the most industrialised countries as well. (UNCTAD, 2006). EC MNCs and incumbent multinationals do not operate any longer in separate spheres – as regards both geographical markets and product segments – as it used to be for LDC and industrialised country MNCs when Wells developed his theory.

## **1. 2. The localized technological change and the technological accumulation theory**

Some shortcomings of Wells’ approach were stressed in the 1980s by Sanjaya Lall, who applied the localized technology change theory to interpret LDC firms’ FDI, and by John Cantwell, in his technological accumulation theory.

In Lall’s contention, the range of firm specific technological advantages on which LDC firms’ FDI is based is not necessarily confined to the imitation or adaptation of imported technology – as predicated by the PLC theory – but can originate in the same firms’ own innovation. Technology change is not undertaken by the single firm in isolation: it involves a whole range of subjects such as its suppliers, distributors and the consumers. Technological advance thus “‘moves’ all the related activities with it, each enterprise innovating in the ‘locality’ of its own known techniques” and this makes the process irreversible as “older technologies, while they may be ‘known’ in some abstract sense, cannot be efficiently reproduced or transferred once the entire industrial system has moved on to new technologies” (Lall, 1983a: 5). The

irreversibility of such process is what makes possible LDC innovative firms' advantages not to be profitably matched by industrialised countries firms<sup>2</sup>.

In Lall's contention LDC technological edges can consist in particular in productive techniques especially appropriate for the developing countries' factor price and quality conditions, in the efficiency of their production techniques at a smaller scale than the one used by industrialised country firms, and in their ability to develop products that match the local needs or tastes particularly well . To this respect, Lall develops some ideas proposed in the wide and policy-oriented debate of the 1970s and 1980s on the "intermediate technologies" or "appropriate technologies" for developing countries (Balcer, 1981). However, Lall points out that technological edges of LDC firms are not necessarily matured in small-scale, labour intensive technologies. Lall's empirical work about India proved that the FDI originating in this country is not confined to simple, low technology, small scale and labour intensive operations (Lall, 1982).

Competitive advantages of LDC firms can evolve thanks to a "process of skill and technology accumulation" (Lall, 1984: 548) and these firms can develop "genuinely unique and localised technological innovation" (Cantwell and Tolentino, 1990: 16). As a result of this process, LDC firms' technological capabilities can put them in the position to invest also in the industrialized countries, a phenomenon of which Cantwell and Tolentino find an empirical evidence<sup>3</sup>.

The sectors in which LDC FDI is undertaken remain different from those of OECD countries FDI, but an "increasing convergence" is observed (Cantwell and Tolentino, 1990). Besides, it is interesting to note that this theoretical approach accommodates, unlike the PLC framework, also the asset seeking FDI in addition to the resource- and the market-seeking ones. For LDC companies that have already accumulated a certain level of technological advantages asset-seeking FDIs represent

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<sup>2</sup> Both the relationship between internal and external knowledge for the generation of new technologies and that between irreversibilities and localized technological change are widely dealt with by Antonelli (1995, 2008).

<sup>3</sup> Canwell and Tolentino in particular refer to FDI carried out in the industrialised countries by investors based in South Korea, Taiwan and Brazil.

a means to improve such level by accessing technological resources in the industrialised countries<sup>4</sup>.

Lall and Cantwell and Tolentino therefore offer an interpretation of Third World firms' internationalization that seems to reflect some characteristics of today's emerging country MNCs. This is true as regards the variety of multinationalization experiences, a feature that is becoming frequent among contemporary emerging countries MNCs (Sauvant, 2005; Tolentino, 2008).

### **1.3 The eclectic paradigm and the investment development path**

According to John Dunning's eclectic paradigm, to engage in international production firms have to be endowed with ownership advantages; there must be an incentive for them to internalise such advantages instead of exploiting them through licenses (so called internalization advantages), and there must exist for such firms some localization advantages. (Dunning, 1983: 123).<sup>5</sup> He argues that also "the emerging phenomenon of outward direct investment by developing countries can be usefully explained by the eclectic theory of international production" and that "the propensity of a country to engage in foreign direct investment (...) is a function of its stage of economic development" (Dunning, 1981: 1).

As their GNP per capita increases, countries pass through the different stages of what Dunning calls an investment development *cycle* or *path* (Dunning, 1986; Dunning, 1988), with their inward and outward foreign direct investment, and therefore the balance between the two, linked to their stage of development. In particular, the existence of a positive correlation and of a J-shaped relation between the net outward investment and GNP per capita is assumed.

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<sup>4</sup> Such investments are reported for companies based in the newly industrialized countries, but also for Indian, Brazilian, Venezuelan, Malaysian companies (Cantwell and Tolentino, 1990). Also Lall, as back as the early 1980s, met with a few cases of Indian FDI undertaken to get access to new technologies (Lall, 1983b).

<sup>5</sup> The *OLI* paradigm, under which Dunning's eclectic paradigm is commonly known, comes from the initials of the above mentioned advantages: O for ownership, L for localization, and I for internalization.

The ownership advantages of LDC MNCs tend to reflect the structure of their countries' resource endowments (Dunning, 1986: 38). Examples of such ownership advantages are, according to Dunning, "transferable asset advantages, based on country-specific factor endowments - mainly capital, labour, natural resources, and individual entrepreneurship; ability to adapt (recycle) imported skills and technology" (ibidem: 40). Other ownership advantages of LDC MNCs mentioned by Dunning are the better knowledge of the other LDC countries demand and production factors' markets, the better mastering of technologies and skills that are particularly suitable for these countries and the shorter institutional distance with other such countries. These kinds of advantages can be exploited in other LDCs, in sectors requiring intermediate or mature technology and semiskilled labor, and where economies of scale are less relevant.

The increase in LDC MNCs' activity directed towards industrialised countries is explained by the circumstance that the companies of the countries that entered the third stage of their development path have engaged more and more in innovation-intensive sectors, which spurred them to market-seeking FDI to cover R&D costs. However, such companies have carried out FDI in the industrialised countries also to keep on upgrading their ownership advantages. In turn, also MNCs based in LDC that have not yet entered the third stage of their development have decided to undertake asset-seeking FDI to upgrade their domestically based ownership advantages to survive even in their home countries, where – due to the increasing liberalization of the international economic environment – they have started feeling the competitive pressure of foreign firms. This shows that asset-seeking investments have to be based in any case on some kind of competitive edge.

In some recent contributions, Dunning recognizes that Third World multinationals "might be prompted to invest in more advanced countries to access or augment, rather than to exploit their ownership advantages" (Dunning, 2006: 139)<sup>6</sup>. Nevertheless this scholar claims that also when undertaking such kind of investment

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<sup>6</sup> In fact Dunning's framework takes into consideration the FDI motivated by the aim of accessing foreign technology right with reference to the stage two of the investment development path (Dunning, 1986: 29).

the enterprises have “to possess some unique and sustainable resources. Indeed, “asset-augmenting FDI require significant managerial, organizational, and institutional capabilities in order to effectively internalize the acquired assets” (Dunning et al., 2006: 12). Consistently with such view, Dunning refers to the asset-seeking investment with the expression “asset-augmenting” FDI.

Finally, Dunning recognized the need to extend his theoretical framework so to include among these kinds of advantages those that a firm gets from being part of alliances (Dunning, 1995). Likewise, he also accepts that among the ownership advantages should be included also the management abilities in finding and leveraging “resources and capabilities from throughout the world, and to coordinate these with the existing resources and capabilities under their jurisdiction” (Dunning, 2000: 169)<sup>7</sup>.

The OLI paradigm still contains some ambiguities and lays itself open to different interpretations, and this is the ground on which some recent contributions regarding today’s LDC MNCs are based.

#### **1.4 Asset-seeking motivations as a key explanation: the imbalance and the springboard approaches**

The theoretical approaches that we have previously outlined share the same fundamental assumption, elaborated starting from the 1960s with reference to the behaviour of the Western MNCs (Hymer, 1960): that in order to expand abroad firms must possess competitive edges over firms of other nationalities strong enough to overcome the initial disadvantages that they will face in the host country<sup>8</sup>. It is exactly this assumption that is questioned by some scholars with reference to the internationalisation experience of the contemporary emerging country MNCs, who in particular address their critical remarks to the OLI paradigm.

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<sup>7</sup> Momigliano and Balcet reviewed some early contributions of the so called “Reading school” to accommodate the new forms of foreign involvement within the eclectic theory (Momigliano and Balcet, 1983).

<sup>8</sup> Following Bain, Hymer tracked back such advantages to particularly favourable conditions to access the factors of production, to a better control of a more efficient production function, to better distribution facilities and to differentiated products.

Moon and Roehl advance a theoretical framework – which they name the “imbalance theory” – complementary to the OLI paradigm, to interpret what they call the “unconventional FDI”, among which they include the investment undertaken by the LDC firms in the industrialised countries (Moon and Roehl, 2001). These scholars, who draw on the resource based view of the firm and in particular, as the authors acknowledge, on E. Penrose’s theory of the growth of the firm (Penrose, 1959), recognize that the decision of undertaking an FDI can be in fact motivated by the intention of exploiting abroad an advantage that the firm possesses or of internalizing a market. They however maintain that there are cases in which “the firm may be motivated by its own disadvantages in going abroad” (ibidem: 200). Such disadvantages can refer to the lack of resources such as technology or management know how but also to the possession of too little a market share or to a poor home country image. Nevertheless, Moon and Roehl explicitly mention that some ownership advantages are needed also in the case of factor seeking FDI. What is important to note is that, however, in the case of LDC firms investing in industrialized countries, such advantages do not amount to “significant ownership advantages relative to the firms in the host country” (Moon and Roehl: 205), as the original version of the OLI paradigm would predicate.

In an interesting contribution, Luo and Tung argue that EM multinationals use outward investments “as a springboard to acquire strategic assets needed to compete more effectively against global rivals” (Luo and Tung, 2007: 482). This is done “through some path-independent and proactive steps, such as merger and acquisitions and strategic asset-seeking from advanced markets” (ibidem: 485), in particular to access “sophisticated technology or advanced manufacturing know-how” as well as brands, managerial expertise and access to consumers (ibidem: 485). Moving from empirical evidence, these scholars highlight that such capacities are mainly grounded on the expertise they have developed “in mass production through OEM arrangements and international experience through cross-national alliances in their home country” (Luo and Tung, 2007: 486). That is: the competitive advantages were not originally possessed by the companies in question but were mainly generated through their participation in international alliances, as well as thanks to the spillover

effect of inward FDIs. All the above mentioned sorts of linkages with foreign partners allow these companies to overcome problems of market intelligence and uncertainty regarding the quality of knowledge; to upgrade technological and process management skills; to accumulate considerable financial and operational assets; to develop learning experiences; to be integrated into the internal network of their foreign partners, thereby offering a highly effective mechanism for the transfer of tacit knowledge.

Lastly, according to Luo and Tung, departures from the incremental approach to internationalisation (Johanson, Vahlne, 1977) are evident with respect to the experiences of emerging country MNCs on the international markets. Many of them indeed start their internationalization process simultaneously undertaking operations on different geographical markets, without being worried by psychic distance, and do so with a high commitment of resources, through acquisitions or greenfield investments.

### **1.5 Asset-seeking motivations as a key explanation: the linkage leverage and learning theory**

Moving from a resource-based view of internationalization, Mathews' main claim is that the experience of some kind of MNCs does not fit with the OLI paradigm. This is so, because the internationalisation process of such MNCs "is not based on the possession of overwhelming domestic assets which can be exploited abroad" (Mathews, 2006: 17)<sup>9</sup>. In Mathews' contention this is true for both "newcomer" MNCs and, what we are more directly interested in, for "dragon multinationals" – that is "successful latecomer" firms based in a country of "the Periphery" (Mathews, 2002: 8)<sup>10</sup> –. On the contrary, the most salient feature of latecomer firms' "starting position is the absence of vast resources and capabilities" (ibidem: 171). In particular "by definition", according to this scholar, latecomers "lack technological or marketing innovations" (Mathews, 2002: 40). The internationalisation process

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<sup>9</sup> "Resource" and O advantage can be considered as synonymous respectively in the terminology of the resource based theory and in Dunning's terminology.

<sup>10</sup> In turn latecomer MNCs are defined as MNCs based in "late-developing countries, typically in East Asia" but also Latin America or South Asia" (Mathews, 2006: 30).

represents, according to him, the best way through which they can acquire resources and thus secure themselves a competitive position. In the OLI framework, on the contrary, “the MNE exists because of its possession of superior resources, i.e. superior to those available to a domestic competitor” (Mathews, 2006: 18). Therefore, while the OLI framework can be retained as fitting for the incumbent MNCs, this scholar puts forward to “go beyond” it “for the new cases such as Dragon Multinationals” (ibidem). In particular, to interpret the internationalization process of the latter the linkage, leverage, learning framework (LLL) is advanced<sup>11</sup>. Such companies are indeed claimed to be skilled in establishing several kinds of *linkages* with incumbent firms. The linkage concept refers “to the capacity of the firm to extend into new cross-border activities via interfirm relations” (Mathews, 2002: 116). Latecomers adopt strategies to match those of the incumbents, for instance entering outsourcing/OEM<sup>12</sup> or technology licensing contracts with the latter. According to Mathews, latecomers are not focused on their own advantages but on those which they can acquire externally. The resources in question, as made clear by Mathews are “resources of all kinds, particularly knowledge resources” (ibidem: 177). The scholar also warns that such outward orientation, that takes the form of the establishment of several linkages, involves high risks and uncertainties. Thanks to their ability in weaving such linkages, latecomers can *leverage* “resources from the strengths of others” (Mathews, 2006: 14). With this concept Mathews refers to the reach for resources beyond it by the firm, and to the inward process of absorption of new resources. The resources that latecomers are expected to target through this leverage actions are the most easily imitated, for instance through reverse engineering; and the most transferable, because available either as explicit technical knowledge – for instance through consultants – or on the open market as specialized equipment. Latecomers are very keen on *learning*, that is on enhancing their capabilities as a result of the repeated application of linkage and leverage

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<sup>11</sup> This definition is to be found in Mathews (2006), while in Mathews (2002) the same framework was referred to as OLI\*: Outward orientation, Linkage and leverage, Integration.

<sup>12</sup> OEM contracts are defined by Mathews as outsourcing contracts “where the activity contracted to a third party is a critical, high value-adding part of the process” (Mathews, 2002: 118).

strategies. The latter two features allow latecomers' internationalization to proceed fast, so that Mathews claims that acceleration represents a feature characterising the internationalization process of latecomer MNCs, reaching, within a decade, a wide geographical coverage and a leadership positions in the list of the leading world companies.

### **1.6 An alternative approach: alliances, acquisitions, leverage and learning**

Emerging countries companies can be expected to lack monopolistic advantages in the strict sense, in particular as regards patents or strong brands. However, the claim that the most salient feature of latecomer firms is "the absence of vast resources and capabilities" (Mathews, 2002: 171) does not correspond to the empirical evidence in the case of most countries.

These companies often possess competitive advantages and firm-specific capabilities, which can fairly well correspond to the ownership advantages considered by Dunning in the oldest versions of its OLI theory (Dunning, 1979), and enriched in the last and enlarged version of his paradigm (Dunning, 2000). We make reference to the following competitive advantages specific to the emerging country firms.

- The ability to obtain inputs on favoured terms, due to size or monopsonistic influence, as it happens when the companies in question have reached dominant positions on their home market.
- The favoured access to production inputs such as low cost labour and raw materials.
- The supply of low cost skilled labour and human capital, as in the case of Indian engineers and ICT scientists.
- The capacity of fast assimilation and creative recombination of transferred technologies and know-how.
- Abundant financial resources, as in the case of booming stock markets.<sup>13</sup>
- Marketing skills (as Lall highlighted as back as in the early 1980s).

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<sup>13</sup> The latter circumstance applies to the Chinese or (to a lesser extent) the Indian case, where the stock market has been booming in the last few years (Deaglio, 2008).

- Managerial abilities in finding and leveraging resources and capabilities from throughout the world, especially from foreign partners, and to coordinate them with the existing resources and capabilities.
- Last but not least, the active support by the government of many emerging countries, ranging from traditional forms of trade protection to new forms of strategic trade policies and to State or public ownership.

The establishment of cooperative relations of different nature with foreign firms plays indeed a more and more important role in this context, where the alternative between market or hierarchies is in fact overcome and FDI represents only one of the means these companies resort to, and often not the most important one (Dunning, 1995).

Drawing from works at the frontier between FDI theory and economics of innovation, a useful concept that we could apply to the case of EC MNCs is the double network, proposed by Zanfei and Castellani (Castellani and Zanfei, 2006),

Developing the idea of asset seeking FDI (Dunning and Narula, 1995), these scholars propose to apply that concept to interpret the recent evolutions in the way MNCs generate and transfer a specific resource: knowledge.

- MNCs “tend to develop external networks, with other firms and institutions that are located outside” its boundaries, “in order to increase the potential for use and generation of knowledge” (Zanfei, 2000: 516). The external network involves not only the multinational headquarters, regional and global, but also the foreign affiliates (FAs) in each country. It includes cooperative relations not only with incumbent firms (as stressed by Mathews), but also with local specialized suppliers and clients, research institutions and universities.
- The internal network refers to the complex intra-group flows of goods, people, information and resources, connecting FAs, regional and global headquarters; it represents a web of linkages among the internal units of the MNC, scattered in different geographical contexts. This approach suggests that the relations between these units are not only hierarchical, and a different mix of centralization or decentralization characterizes the stages of growth and the multinational expansion of the firm. FAs are actively involved in the trade-off between autonomy and integration, while asset-seeking and asset-exploiting strategies co-exist. The organizational challenge posed by the double network consists in the tension between the need for local units to be autonomous to perform their task in the

best way, and the need on the one hand to avoid centrifugal forces to disintegrate the MNC itself, and, on the other hand, that too much of autonomy “constrain the circulation of knowledge” within it.

Even if it referred more directly to R&D activities, the double network structure of the MNC can be generalized to other functions of the firm, such as distribution or purchasing.

The process of establishing the external network, on which Castellani and Zanfei elaborate, can indeed recall the one described by Mathews as fundamental for the latecomers to leverage all kind of resources, that is the establishment of a network of linkages with incumbents. However, the approach of Castellani and Zanfei looks to a larger spectrum of alliances with independent firms and institutions. In the linkage, leverage and learning (LLL) framework Mathews maintains that the multinationalization process of emerging country companies is grounded on the linkages they are able to establish with incumbent global companies, thus in their leveraging of resources from these relationships and in their ability to learn from this process of linking and leveraging.

We think, however, that the broad notion of linkages, as proposed by Mathews, can be better qualified and decomposed in the more precise notion of “alliances”, referring to the external network and its international expansion, on the one hand, and in that of “acquisitions”, with reference to the internal network, on the other hand.

We can include in the category of “alliances” different forms of equity (joint ventures) and non-equity long-term cooperative relations. To this respect, some useful insights are provided by the theory of the joint venture (JV), considered as representative of a wider range of organizations aimed at strengthening cooperative ties between companies from different countries (Contractor, Lorange, 2000). Two main approaches seem relevant in order to qualify the external network of MNCs (Balcet, 1990).

- From a static point of view, a JV can be interpreted as a “hostage”, i.e. an institutional device created in order to guarantee each of the partners from the possible opportunistic behavior of the others. Therefore, it allows to make operational transactions too complex for a purely contractual arrangement, given the failure and the imperfections of markets. It is noteworthy the case, in particular, for the market of knowledge, imperfectly regulated by the intellectual property rights, rules and international standards.

- From a dynamic point of view, the JV can be viewed as a “learning instrument” in a broad sense, with different and complementary motivations for each of the partners. Such motivations include the access to new technology and knowledge, learning of organizational and managerial skills, access to new markets, especially those characterized by a strong “distance” factor (geographical, cultural and institutional). In the case of developing and emerging countries, a dynamic equilibrium can typically be reached between a Western multinational, providing advanced technology, and a local partner, providing the access to a difficult but large and fast growing market. The dynamic approach helps to understand the evolutionary nature of JVs and alliances, that should always be related to their specific historical and geographical context.

Taking into consideration both alliances and acquisition, i.e. the role both of the external network and of the internal multinational network, two different and parallel sequences can therefore be highlighted :

Alliances (JV) $\Rightarrow$ Leverage $\Rightarrow$ Learning Acquisitions $\Rightarrow$ Leverage $\Rightarrow$ Learning
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These sequences tend to characterize the trajectories of the multinational growth of emerging country enterprises. Alliances and JVs may be located within the emerging country, in a first stage, or also abroad, in a second stage of multinational growth. Similarly, the acquisitions in a first stage may target FAs in the country, and companies abroad in the second stage. All together, these trajectories allow the acquisition and assimilation of skills and new technology, shaping the new emerging multinational actors.

### 1.7 Research questions

With our empirical work we aim at testing whether our case study companies reflect the characteristics that, according to some scholars whose contributions were outlined above, would make emerging country MNCs different from their so called “conventional” counterparts. In so doing we also try to highlight the emergence of a double network organization aimed at easing the generation and the circulation of knowledge, also with regard to emerging country MNCs.

We’ll focus on the following questions.

- What are the competitive advantages (if any) on which the internationalization process of our sample firms is based ?
- What is the respective role of alliances, joint ventures and acquisitions in India in the process of assimilation of technology and capabilities ?
- What is the respective role of alliances, joint ventures and acquisitions abroad in the process of international growth of the firms?
- What kind of dynamic relation exists between alliances and acquisitions in India and abroad?
- Which organizational devices have been developed by the firms in their internationalization process?
- What balance between market-oriented and asset-seeking foreign operations?
- How important have been the country-specific factors and advantages, including Indian policies?
- Is the internationalisation process accelerated or incremental?

## **2. Empirical evidence on Indian multinationals: Two case studies from the pharmaceutical industry**

In the more recent years the Indian pharmaceutical industry has been establishing itself as a global competitor and it is contributing to shape the new international image of India (*The Economist*, 16 September 2006). Several companies active in this field have successfully entered the international scene not only as exporters but also signing alliances with incumbent pharmaceutical MNCs and undertaking operations abroad. Ranbaxy is probably the best known example of this kind of Indian multinationals<sup>14</sup>. It is interesting to note that this performance was obtained by a sector that has a relatively short history in the country: the production

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<sup>14</sup> However, Ranbaxy's majority stake was acquired in 2008 by Daiichi Sankyo Co, Japan's third-biggest drugmaker ([www.domain-b.com](http://www.domain-b.com)).

of allopathic drugs started indeed only at the time of British India<sup>15</sup> and the industry was still “almost non-existent at the dawn of independence” (Pradhan, 2007: 1). At that time the market share of domestic firms was about 10 per cent, against 90 per cent in the hands of MNCs, that covered the demand predominantly through imports. The development the Indian pharmaceutical sector is strictly linked to a set of measures undertaken by the Indian government since the independence, having as object the development of a domestic pharmaceutical industry. Initially, that aim was pursued by the setting up of public undertakings as well as research institutions in the industry in question, and by a liberal attitude towards FDI (Aggarwal, 2004). As regards the latter, while during the colonial period such companies were virtually absent, but for exports of formulations, they entered directly on the field after the Indian independence, when they started establishing some units first for the packaging operations of imported formulations, afterward for the manufacturing of medications with imported ingredients and later they began the local production of – at least part of – the ingredients they needed (Chaudhuri, 2004). Starting from the 1970s, to face the paradox that a very poor country like India experienced drug prices among the highest in the world, several initiatives were taken by the government, first of all a reform of the IPRs regime: the Indian Patent Act of 1970, the “most conscious attempt among developing countries (...) to improve terms for accessing international intellectual property” (Forbes, 1999). According to this regulation, pharmaceutical products were not patentable in India, while the protection granted by patents on pharmaceutical processes could not last more than 7 years. Price controls were introduced in the 1960s, and a price regulatory policy was introduced in 1970 with the Drug Price Control Order (DPCO), whose coverage reached about 90 per cent of the industry in 1979 (Aggarwal, 2004). Restrictions on foreign firms’ activities were also introduced, first with the Foreign Exchange Regulation Act of 1973 (FDI cap in this industry was set at 74 per cent) and then with the Drug Policy of 1978 (reducing that cap first to 40 and later to 26 per cent). As a result of the aforementioned interventions a local industry, based on reverse engineering, learning

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<sup>15</sup> Under the initiative of the government the manufacture of anti-malaria drugs began at that time and several research initiatives were established (Chaudhuri, 2004).

by copying and learning by doing, started developing, and in 1982 the Indian firms held about 50 per cent of the local market (Gehl Sampath, 2006).

The liberalization of the Indian economy affected also the industry in question, that was the object of liberalizing measures starting from the late 1980s and during the 1990s. Among such measures, the new IPRs regime has to be mentioned. Indeed, a series of amendments to the Indian patent law were issued between 1994 and 2005 to bring it in line with the TRIPs agreement in the WTO framework. As a result of such interventions, product patents can be granted in India from 1 January 2005<sup>16</sup>. Other measures included the progressive reduction of the price control<sup>17</sup>, the introduction of compulsory good manufacturing practices (GMP), a reduction of the trade barriers that had protected the industry<sup>18</sup>, and a new attitude of the government towards FDI.

Trade liberalization put competitive pressures especially on local bulk drugs manufacturers, as such products can be imported more and more cheaply, first of all from China. Moreover, the new IPR regulation forced domestic companies to re-think their business. Under the 1970 IPR regulation Indian pharmaceutical firms could indeed thrive thanks to their chemical R&D skills and manufacturing expertise, which allowed them to discover and apply non infringing processes to manufacture drugs which were elsewhere covered by patent protection. Such formulations could then be sold on the Indian as well as on other low-income markets with similar IPR regimes. The new regulation, however, makes the manufacturing of generic versions of drugs patented in other countries a route no more viable<sup>19</sup>. To remain on the

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<sup>16</sup> Government of India, website of the Controller General of Patents Designs and Trademarks; Mashelkar, 2007.

<sup>17</sup> So the DPCO revisions of 1987 and 1995 reduced the above mentioned control respectively to 70 and 40% of the market (Aggarwal, 2004).

<sup>18</sup> Peak custom duty on bulk drugs and raw material have been progressively reduced from 35% in the early 2000s to 15% five years later; exemption from custom duties for materials imported for clinical trials, and drugs included in the list of life saving medicine (Pradhan, 2007).

<sup>19</sup> In fact this possibility is still allowed for pharmaceutical products patented internationally before 1 January 1995.

market, Indian companies have entered the following main routes (or a combination of them):

- specializing in their “traditional” business – generics manufacturing – developing non-infringing processes to produce off patent pharmaceutical products. In so doing they could profit from the expiry of patent protection on numerous blockbuster products in the near future. This option, however, implies operating on a more and more competitive market, peopled by emerging country competitors but also by research based MNCs that developed a generic branch and investing in R&D to quickly enter the market after patent expiry;
- focusing on their own genuine product innovations, which however requires very important investments in R&D;
- specialising in outsourcing contracts with foreign companies, which in the pharmaceutical industry basically consist in contract research (CR) and/or in contract manufacturing (CM, or CRAM in case of a combination of the two) agreements. In this way the Indian companies can exploit the strong need for international pharmaceutical firms to cut their costs along the whole productive chain, externalizing one or more of their productive phases, such as - in the case of CR - clinical trials, medical and safety monitoring, data management, writing services connected to the drug application process, and the very manufacturing stage – in the case of CM. This route also implies strong investments, in order to improve reputation and to be chosen as a reliable partner by the foreign parties.

As a result of the policy outlined above, the Indian pharmaceutical industry developed in the course of time, showing a strong growth in particular starting from the 1980s. In 2007 the Indian pharmaceutical industry represented about 1.8 per cent of the world market in terms of value (ranking 14<sup>o</sup> at global level) but 8 per cent in terms of volumes (ranking 4<sup>o</sup>) (OPPI), and the highest number of FDI approved manufacturing facilities outside the US was located in India. In the mid 2000s local manufacturing met about 75 per cent of India’s demand for medicines (KPGM, 2006).

This industry is characterized by a small number of large companies and a large number of small units. In this regard, Pradhan (2007), drawing upon the Annual Survey of Industries (2000-2001) mentions a total of 2,872 units in the organized sector, with 249 large units and 2,623 small units<sup>20</sup>. The Indian pharmaceutical market is fairly competitive but concentration at the top of it is increasing: the total share of the top 10 firms amounted to roughly 16 per cent in 1992 and to 18 per cent in the late 1990s, while in 2002 the top 6 got about 25 per cent of the market (Aggarwal, 2004). In 2006 the share of the top 10 companies is around 37 per cent (OPPI)<sup>21</sup>. Direct employment generated by the organized sector is estimated at 290,000 people, increasing to 460,000 if estimates for the unorganized sector are included (OPPI, 2005).

## **2.1 Nicholas Piramal and Sun Pharmaceutical Industries: structure and evolution**

- Nicholas Piramal (NP)<sup>22</sup> is part of Piramal Enterprises, a family group established in India in 1933 and originally operating mainly in the textile industry. In 1988 Nicholas Piramal's history began with Piramal group's acquisition of Nicholas Laboratories (India), a pharmaceutical company that already possessed an interesting product portfolio and belonged to Aspro Nicholas, a Swiss based firm which in turn in 1984 had been acquired by the US multinational Sara Lee (Piramal et al., 2002). Twenty years later, in 2008, Nicholas Piramal is a leading Indian pharmaceutical company, manufacturing

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<sup>20</sup> As regards the number of units, the industry association OPPI mentions about 10,000 units in 2007, without distinguishing between organized and unorganized sector. The number of large companies amounts to about 300 according to the same source. Due to the official source he draws upon, we prefer to make reference to the data offered by Pradhan, and suppose that 10,000 can be the approximate number of units including the unorganized sector.

<sup>21</sup> In 2006 the top ten companies, in order of market share, were: GlaxoSmithKline (5,2%), Ranbaxy, Cipla, Nicholas Piramal, Zydus Cadila, Sun Pharma, Alkem, Pfizer, Lupin, Dr. Reddy's Lab (2,3%).

<sup>22</sup> The company name was changed in 2008 in Piramal Healthcare (Nicholas Piramal, 2008). For sake of simplicity we will however continue to refer to the company with its most widely known original name.

formulations across ten therapeutic areas and bulk drugs, and representing one of the largest contract research and manufacturing (CRAM) enterprises in the country<sup>23</sup>. In 2006 Nicholas Piramal, holding a share of 4.3 per cent, ranked fourth among the top ten pharmaceutical companies in India (OPPI on ORG IMS data). In 2008 the company employed about 7,700 people, 2,000 of which outside India, and its consolidated turnover amounted to 700 mln \$. Data about the historical trend of standalone sales of Nicholas Piramal are supplied in graph 1 below.

The acquisition of Nicholas Laboratories was followed during the 1990s by several operations carried out by Nicholas Piramal, targeting other Indian units of MNCs such as the subsidiaries of Roche Products Ltd (1993), Boehringer Mannheim India Ltd. (1996), Hoechst Marrion Roussel Ltd.'s Research Centre (1998), Rhone Poulenc India Ltd. (2000), ICI India Ltd.'s Pharma Division (2002) and Aventis' Reseach facilities. These acquisitions contributed to establish the productive and R&D structure of NP. Besides, they generated scope economies and improved the company's access to the market. Indeed the acquisitions progressively enriched the company's portfolio with several branded products and strengthened its sales capacity. So, also thanks to that policy, as back as 2001 Nicholas Piramal could count 16 products among the top 300 pharmaceutical brands in the country (Nicholas Piramal, 2001). In addition, after the first three acquisitions its field force amounted to 1,600 people (Piramal et al., 2002). At the end of 1990s Nicolas Piramal formulated its strategy to meet the competitive challenges of the next decade, posed by the change of the IPR regulation and by the liberalization process. First, it was decided to strongly invest in R&D activities oriented to the discovery and development of new patentable products. The second decision was to use strategic alliances with foreign MNCs to get access to new molecules (Piramal et al., 2002) and to develop both the contract research (CR) business (also as a means to generate turnover out of the R&D resources within a short time), and that of contract

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<sup>23</sup> In the same year the latter business generated about 47 per cent of consolidated operative income (Nicholas Piramal, 2008).

manufacturing (CM). Nicholas Piramal therefore found an alternative way to exploit the Indian low cost advantage. Instead of manufacturing generic drugs to sell on foreign markets very soon after patent expiry or challenging existing patents, the company strategically decided to tap the opportunities offered by regulated markets by partnering there with innovator companies, offering outsourcing solutions “across the pharmaceutical life cycle” and in this way “delivering [them] the India advantage” (Nicholas Piramal, 2004: 5). The growth path of NP was therefore based on the building of both an external and an internal network.

Lastly, as regards the formulation business it was decided to move towards high grow potential therapeutic segments, to enhance the power of the company’s branded products and to expand the share of products outside price control in the company’s product basket (Nicholas Piramal, 2001; Piramal et al. 2002)<sup>24</sup>. As a result of the efforts in this direction the sales of formulations in the so called lifestyle segment, which includes therapy areas considered to have a high growth potential, contributed to 32.9 per cent of the total operating income (consolidated) in 2008. The company, which in 2008 was present in ten therapeutic areas, also chose to specialize in respiratory drugs, to which it devoted a special attention also in occasion of its overseas acquisitions<sup>25</sup>. In addition, in 2008 only 14 per cent of formulation sales regards products under price control.

- Sun Pharmaceutical Industries is a family company established in 1983 by Mr. Dilip Shanghvi. It started as a very small enterprise, employing only two people, manufacturing only five products in the psychiatry therapeutic area and

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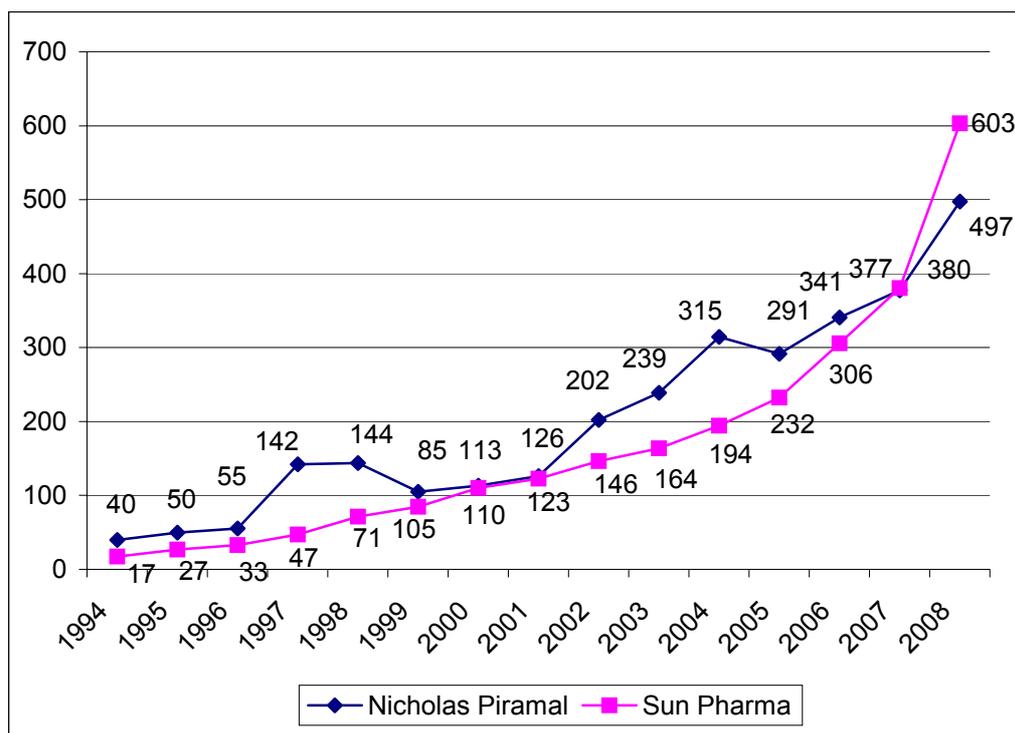
<sup>24</sup> According to OPPI, in March 2004 the price of 74 drugs was still under the government control (amounting to about 26% of the market). It has to be mentioned that in the past such control was much more extensive: with the 1979 revision of the Drug Price Control Order, issued in 1970, it reached a coverage of about 90% of the industry (Aggarwal, 2004).

<sup>25</sup> So in 2008 the products in question represented the most important segment of the company’s formulation business, with over 17 per cent of total sales (Nicholas Piramal, 2008).

distributing them only in two Indian states. In 1988 SP's sales made it rank 107<sup>o</sup> on the Indian prescription drug market with a market share: 0.1% (company website quoting ORG data). The results obtained by Sun Pharmaceutical starting from that commencement is quite impressive. Indeed in 2006, little more than twenty years since its set up, it reached rank number six among the top ten pharmaceutical companies in India (OPPI), with a market share of 3.2 per cent. Such growth was obtained also through repeated acquisitions carried out and equity stakes bought on the domestic market. Even if the first such operations – occurred in 1996 – targeted an Indian unit of a MNC (the API manufacturing plant of Knoll Pharmaceuticals), SP's acquisition campaign on the Indian market mainly involved local competitors. These operations allowed SP's productive capacity to expand and generated scope economies, allowing it to progressively enter new therapeutic segments. Other acquisitions and greenfield operations carried out overseas strongly contributed to the company growth. In 2008 SP is a vertically integrated company, employing about 8,000 people, 1,400 of them abroad. It manufactures both APIs and formulations, with the latter representing the most important part of its business. As regards bulk drugs, their production was begun by SP in 1995 to facilitate its manufacture of complex formulations. Ingredients were successively sold to external customers - among which today are included both generics and innovative firms mainly in regulated markets - and they represented about 10% of consolidated sales in 2008. In the early 2000s the company's strategy was focused on three elements: strong brands, research and international markets. In particular, in the formulation business the company strategy aimed at focusing on therapeutic segments for the treatment of chronic ailments and, in this context, to develop technically complex products and to have a better time to market relative to its competitors. In 2008 the company sold in India about 500 formulations in fourteen therapeutic segments, the most important of which in terms of sales remains the neuro-psychiatry one. As regards the API business, where in general a strong competition comes from Eastern Europe and Chinese companies, SP is targeting the segment of speciality API (Kale, 2008). Likewise, to reduce the

increasing competition in the generic formulation business, SP focused on high technology drug delivery systems.

**Graph 1 – Sales of Nicholas Piramal and Sun Pharma (standalone), 1994-2008 (mln of \$)**



Source: our elaboration on Prowess data.

Nicholas Piramal and Sun Pharmaceutical respectively registered a turnover of 700 and 900 mln \$ in 2008, which compares to 9400 mln \$ of Teva in 2007.

From what we mentioned above, we can say that, even if our case study companies' dimensions clearly remain far from those of a global leader, the increase in their standalone sales in the last fourteen years is impressive, amounting to a compound annual growth rate of about 30 and 20 per cent in the case of Sun Pharmaceutical and of Nicholas Piramal respectively.

## 2.2 Competitive advantages - Technological innovation

- Nicholas Piramal started investing in R&D at the end of the 1990s. This decision was part of the company's strategy to meet the competitive challenges of the next decade, posed by the change of the IPR regulation and by the liberalization process.

In 1998 it acquired Hoechst Marion Roussel's R&D unit in India, which was endowed with state-of-the-art research facilities, employed 100 highly experienced scientists and held a large number of international patents. In the following years R&D/sales ratio lowered but still remained higher than in the 1990s, to increase again since 2004. In addition to the internal resources devoted to R&D activities, the company has been very active in developing a number of agreements with research institutions both in India and abroad since the late 1990s. Besides, it entered several R&D agreements also with incumbent MNCs: at least five of them were signed since 2004. Lastly, contract research agreements also represent, as already mentioned, an important part of this company's business. This activity, besides contributing to generate a turnover out of the R&D resources in a shorter time than pure innovative research activities, also contributes to the company's technological upgrading (Kale, 2008). For a list of the above mentioned kinds of agreements and contracts, having as object R&D activities see table n. 1.

In 2007 the company performed R&D activities of several kinds: on new chemical entities (NCEs) discovery, covering four therapeutic areas (oncology, infectious diseases, diabetes and inflammation); on natural products, to develop a collection of extracts from microbes and plants to be used as a source of chemical compounds for NCE discovery; on the development of processes to manufacture active pharmaceutical ingredients (API), that is the "ingredients" used to manufacture drugs, both for internal use and for external customers; and on development of dosage formulations of drug products across all major therapeutic areas, also in this case both for internal use and for external clients. In 2007 the most innovative part of Nicholas Piramal's R&D activities, those focused on NCE discovery, was de-merged to another company owned by

Nicholas Piramal and by some of its shareholders (but listed at the National Stock Exchange and at the Bombay Stock Exchange in June 2008): Piramal Life Sciences Limited (Nicholas Piramal, 2008; domain-b.com, 31 August 2007). This move aimed at separating this kind of activity – which requires higher commitment of financial resources, develops on longer time horizon and implies higher risks – from the branded formulations and custom manufacturing businesses, and, according to the company statements, at facilitating bringing in investors interested in investing directly in innovative research firms.

- Sun Pharmaceutical Industries started investing in R&D earlier, in the first half of the 1990s, with the construction of a R&D centre located in Baroda (Gujarat) inaugurated in 1993. A second research centre was set up in Mumbai in 1997, to develop generics for the regulated markets. In particular most of the products manufactured by SP's US subsidiary, Caraco (see further), were developed here. R&D activities develop with reference to three temporal horizons. On the short term R&D remains focused on reverse engineered pharmaceutical products, which allows the introduction of new products in India soon after their international launch, and helps the company maintain its leadership position on the internal speciality formulation market. Besides, this kind of research activities are exploited also to compete on the US generic market. Lastly, it offers Sun Pharmaceutical Industries the opportunity to develop speciality API both for internal use and for external customers on the international regulated markets. It is indeed this kind of R&D activity that strongly contributed to the company's product basket expansion, allowing to bring to market on average 40 new formulations and 25 new API every year. Increasing resources have been invested in mid and long-term projects (Sun Pharmaceutical Industries, 2006; Sun Pharmaceutical Industries, 2008). So, projects with a medium term time reference are focused on both new and known drug delivery systems for India and the emerging markets, and on complex API like steroids and peptides, requiring special technology, manufacturing processes and dedicated sites. Finally, long-term projects refer to NCEs totally new to the world and new drug delivery system projects. The results of such R&D activity, which are more

uncertain, are thought for the world markets. It is this kind of R&D activity that Sun Pharmaceutical Industries de-merged in 2007 and attributed to Sun Pharma Advanced Research center (SPARC) Ltd, the first pure research company in India listed on Indian stock exchanges (company website).

To evaluate whether technological capacities can represent a firm specific advantage of our focus companies we took some indicators into consideration.

- Before looking at the patent activity of our case study companies, it has to be mentioned that the Indian law did not provide for the possibility of patenting pharmaceutical products from 1970 until very recently and that until the 1990s the institutional setting, that strongly protected the local pharmaceutical industry, did not offer Indian companies many incentives to invest in R&D. It was indeed only since that decade that our focus companies started investing in R&D to make innovation a source of their competitiveness.

Sun Pharmaceutical declares to possess a total of 72 patents that the company was granted out of 414 filed<sup>26</sup>. Nicholas Piramal declared to possess “nearly 250” patents in August 2007 (Nicholas Piramal, 2007b). As such numbers per se are not very meaningful, we take again into consideration Teva’s performance for a rough comparison<sup>27</sup>. In September 2008 that company declared to possess

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<sup>26</sup> When companies release this kind of data, we can suppose that they are interested in mentioning the highest possible figure, to prove their technological strength. Therefore we assume that the above mentioned numbers refer to patents (and not to patent families) that the company applied for and received in all countries. As the date to which this information refers is not mentioned by the company website where it is released, we assume that the number in question was up-to-date at the time of our visit to the site, in August 2008.

<sup>27</sup>As regards Nicholas Piramal, a basically generic company is not exactly the right term of comparison, as our case study company cannot be classified as a typical generic company, even if sharing some common features with the latter. Besides, we are also aware that the comparison between the figures supplied by the three above mentioned companies is indeed grounded on two assumptions which we can not verify. First, that all the companies in question, when mentioning the number of granted patents refer (when it is not explicitly stated) to the same criterion : either the

2,978 patents, belonging to 987 patent families, out of 4,668 applications. On the basis of this comparison we can therefore say that proprietary technology is far from representing an “absolute” ownership advantage for our case-study companies (that is a competitive advantage they can spend abroad against all potential competitors).

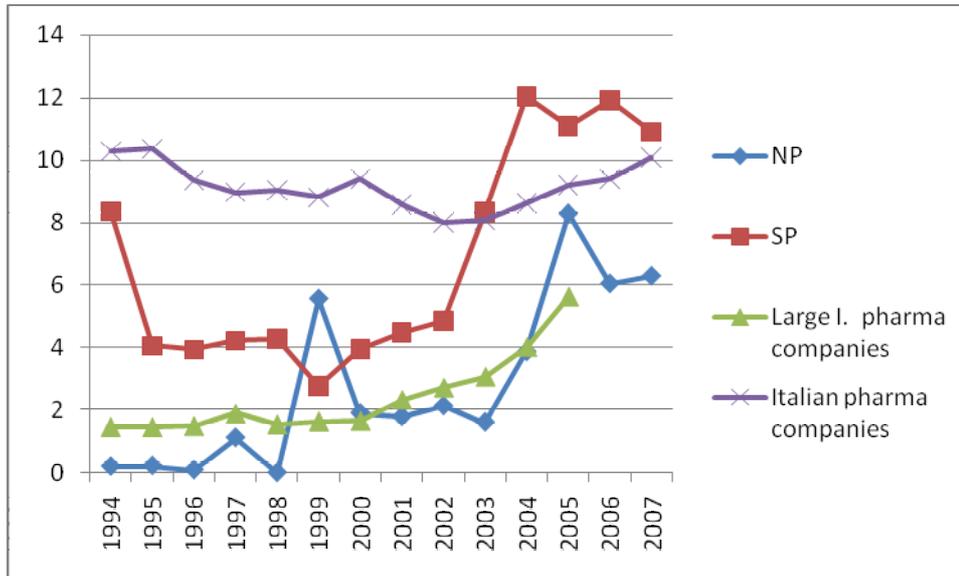
- Coming to R&D expenses (see graph 2), if we look at our focus firms data regarding the R&D expenses/sales indicator, we can see that Sun Pharmaceutical Industries overperforms the large Indian pharmaceutical companies, and that since 1999 NP’s performance is better (even if only on average) than that of the large Indian companies for all the years for which data are available. Lastly, if we consider the trend regarding Italian pharmaceutical companies’ investment in R&D, the effort of Sun Pharmaceutical since 2004 turns out to be quite respectable, in particular if we consider that the above mentioned indicator for Italian companies is referred to domestic and not to total sales<sup>28</sup>.

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number of families or - more likely, for the reason outlined with reference to Sun Pharmaceutical’s patents – the number of patents. Second, that they use the same criterion also to include in that number either only the patents granted to the parent companies or also those granted to their subsidiaries and those IPRs (if any) included in the acquisition deals they made in the course of time. We think that some possible inconsistency in the data is not much relevant in this case, due to the different order of magnitude between the number quoted by the two Indian companies and the Israeli one.

<sup>28</sup> In this regard it has to be remarked that exports represent an important share of Italian pharmaceutical production, ranging from 38% in 1998 to 53% in 2007 and amounting to less than 50% in only 3 years in that period.

**Graph 2 – R&D expenses/sales (%)**



Source:

Sun Pharmaceutical Industries and Nicholas Piramal: our elaborations on Prowess data

Data concerning the large Indian pharmaceutical companies: Pradhan (2008) on Prowess data

Italian firms: Farindustria (2008).

- As regards Nicholas Piramal’s R&D staff, even if its precise consistency at that time is not known to us, we can suppose that at the end of the 1990s the company employed about 100 employees in this activity, that is the staff of Hoechst’s R&D unit acquired in 1998, from which the company started its research centre. In 2007 that number amounted to 387, out of which about 150 in the US and UK subsidiaries (company interview). People engaged in R&D at Sun Pharmaceutical Industries were about 150 in 2003 and reached a number exceeding 500 in 2008 (Sun Pharmaceutical Industries, 2003; Sun Pharmaceutical Industries, 2008). The staff engaged in R&D activities abroad (in US at Caraco and at the Cranbury plant) adds to what mentioned above but the number of these employees is limited (company interview).
- As an indicator of the innovative capacity (and in particular “of the focus of the firm to develop new proprietary drugs”, Chittoor and Ray, 2007: 345) we can mention the number of NCE that the companies have in their pipeline. Such

number increased from 5 in 2002, the year that saw the first patent filing of NP<sup>29</sup> concerning a NCE, to 13 in 2007 in the case of Nicholas Piramal (Nicholas Piramal, 2004; Nicholas Piramal 2007). In the case of SP in 2002 the company had a “two-year research objective: in innovation based research, to have one NCE and 3 delivery system products in human trials” (Sun Pharmaceutical Industries, 2002: 21). In 2007 SP’s pipeline included 4 NCEs and 4 new drug delivery systems.

- It is worth noting here two aspects that can contribute to give our companies a competitive advantage in this field. The first concerns the external source of technology represented by R&D staff that matured an experience abroad in big MNCs or in the academic world (a phenomenon that involves about 10 per cent of such staff as regards Nicholas Piramal, according to the company’s manager we interviewed). These persons contribute to the company that employs them their precious capacities and experience and, as a consequence, contribute to raise its level of knowledge. The second is represented by the low cost of skilled work in India. Indeed, if we exclude the top level R&D personnel, the staff employed in this kind of activity receives a wage much lower than the standard one in industrialised countries. So it is estimated that the wage of an Indian chemist is about one fifth of what such a professional would get in the US<sup>30</sup>. This offers the company the possibility of having well directed – often by researchers who had experiences abroad – larger teams, which speeds the work and improves the quality of the latter, and to do so at a much lower cost relative to the developed countries. What precedes emerged with reference to Nicholas Piramal during the interview with the company management, but we can say it represents a country specific ownership advantage, which can be therefore assumed to be shared also by Sun Pharmaceutical Industries.

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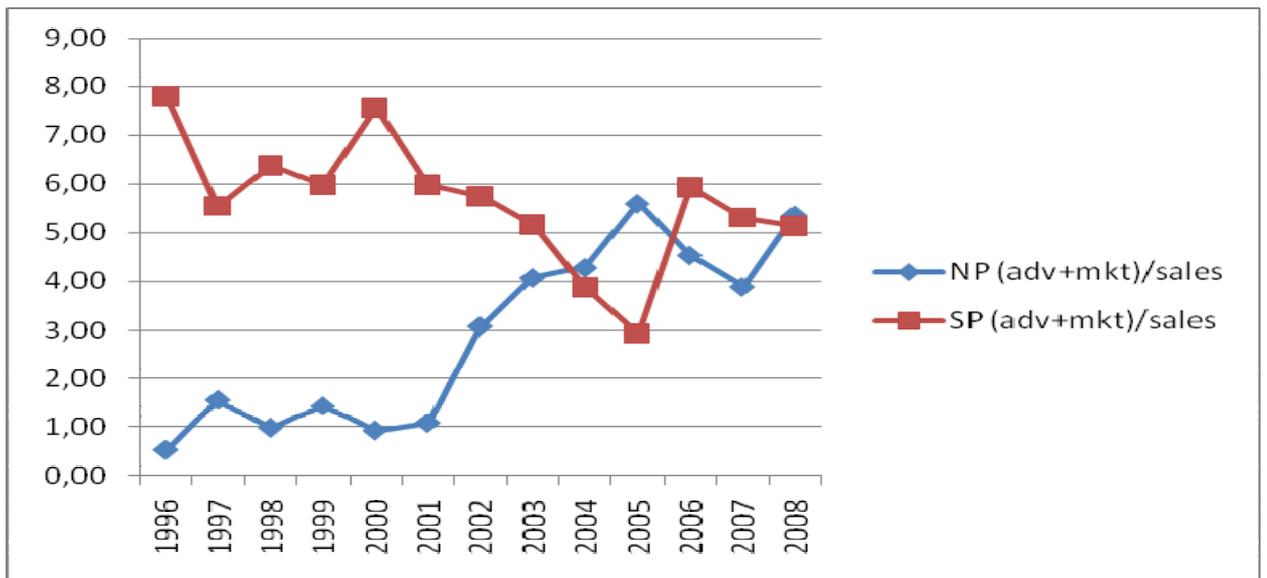
<sup>29</sup> The patent in question was applied for both in India and US (The Hindu Business Line, 12 July 2002)

<sup>30</sup> This estimate considers that a US chemist is hired at 250-300,000 \$ a year (ICE, 2007).

### 2.3. Competitive advantage: Differentiation

- A measure of the extent of product differentiation not easy to obtain (Caves and Williamson, 1985). The producer's expenditures on advertising or marketing expenses, expressed as a share of the total sales, are however widely used to proxy such variable. The trend of such expenses for our case study companies are illustrated by graph 3.

**Graph 3 Marketing + advertising expenses / sales (%)**



Source: our elaboration on Prowess data.

Considering the specificity of the pharmaceutical industry, it is worth noting that marketing activity plays a fundamental role in determining the level of the companies' sales and profitability (Gianfrate, 2004). The strong engagement in this kind of activity does not regard only the innovative, research based companies, but also the generic drug manufacturers (Aggarwal, 2004). Looking at possible ownership advantages of our focus companies, and resorting on the advertising+marketing/sales ratio, we can see that it is much lower in the case of SP and NP than what is estimated for the US pharmaceutical companies, that is approximately 15 per cent (Lakdawalla et al., 2006). It has however to be remarked that, advertising prescription drugs is allowed in the US, while in India this is not possible as regards the general media, which explains at least in part

the lower level of investment by Indian firms in this field. So in 2002 this indicator for 203 Indian pharmaceutical companies was around 5 per cent (Aggarwal, 2004): in the same year Sun Pharmaceutical's results were slightly higher (5.75 per cent) and those of NP much lower (3.09 per cent) than the average. Nonetheless since the mid 1990s the advertising+marketing expenses/sales ratio shows an increasing trend for NP (average 1996-1999: 1.12 per cent; 2000-2008: 3.65 per cent), signalling a stronger differentiation effort. As regards Sun Pharmaceutical Industries, the above mentioned indicator shows a decreasing trend (average 1996-1999: 6.42 per cent; 2000-2008: 5.29 per cent).

- A differentiation effort can be noticed also by looking at the increase in the number of people employed in the promotional activities with prescribing doctors (the so called "field force"). Due to the limits to advertising prescription drugs mentioned before - except for the so called "over the counter products", where advertising plays a role - for both SP and NP in the formulation business field force represents the main marketing tool (company interviews), and its importance has been increasing in the course of the last years. So Nicholas Piramal's field force consisted in 1,600 people at the end of the 1990s (Piramal et al., 2002) and in 3,789 people in 2008 (taking into account only Indian representative strengths). As regards Sun Pharmaceutical Industries, in 2002 it employed in this activity 1,411 people in India, and 2,450 in 2008. Besides, SP's field force abroad consisted in 90 people in 2002 and 450 (outside the US) in 2008.
- The attention devoted to brands by NP is shown by the progressive enlargement of its product basket obtained also thanks to well known branded products acquired through both the acquisition of some Indian units of major pharmaceutical firms and the in-licensing agreements it signed with other incumbents<sup>31</sup>. On the other hand, however, it aimed at making itself a name as a reliable counterpart for large pharmaceutical companies looking for outsourcing

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<sup>31</sup> So as back as 2001 NP's Indian formulation business included well known pharmaceutical products such as Valium, Bactrim and Supradyn (Nicholas Piramal, 2001).

low cost partners, differentiating its whole image from that of its low cost country pharmaceutical competitors.

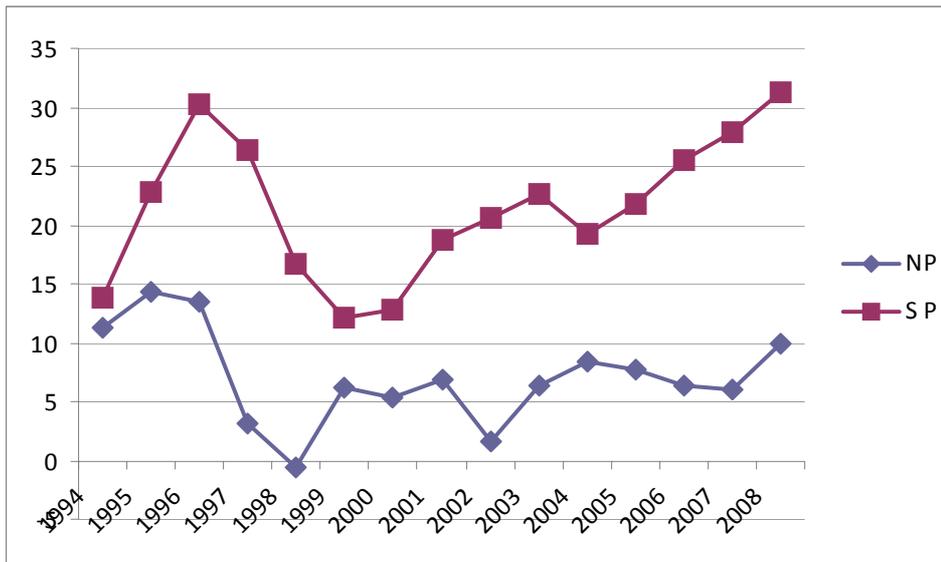
- As regards SP, its management interestingly deems the company's marketing capacities developed with doctors in the prescription drug business as one of the most important competitive advantages which was exploited through the internationalisation process. So, for instance, the Annual Report 2001-2002 described the marketing formula, applied in the therapeutic areas where the company had recently entered, "of carefully selected doctor list/call frequency/repeat coverage" as particularly successful to generate prescriptions, and more effective than price based competition (Sun Pharmaceutical Industries, 2002). In the foreign markets different from the US (mainly emerging countries), the company follows a marketing model fairly similar to the one used in India, based on doctor calls in these markets and on activities such as doctor group meetings, conferences and symposia (Sun Pharmaceutical Industries, 2008).

#### **2.4.Competitive advantages: Financial resources and managerial skills**

The lack of financial resources is commonly considered a weak point of firms based in developing countries. Such shortage of resources does not seem, however, to affect our focus companies. Indeed, when asked about this point during our interview, both the companies' representatives maintained that financing their international expansion had not represented a problem. In particular NP mentioned the positive role in this context of the private equity fund that holds a stake in the company. Besides, internal accruals and the debt market were mentioned as other sources of financial means employed in the company internationalization. SP management highlighted in particular internal accruals and money raised on the stock market as means used to finance the company internationalization, while getting credit through the bank system would have been easy, but hasn't been necessary. In that context internal accruals were mentioned as a particularly important instrument by SP. In addition to the management's statement, we can report the following information concerning the availability of financial resources by our focus companies.

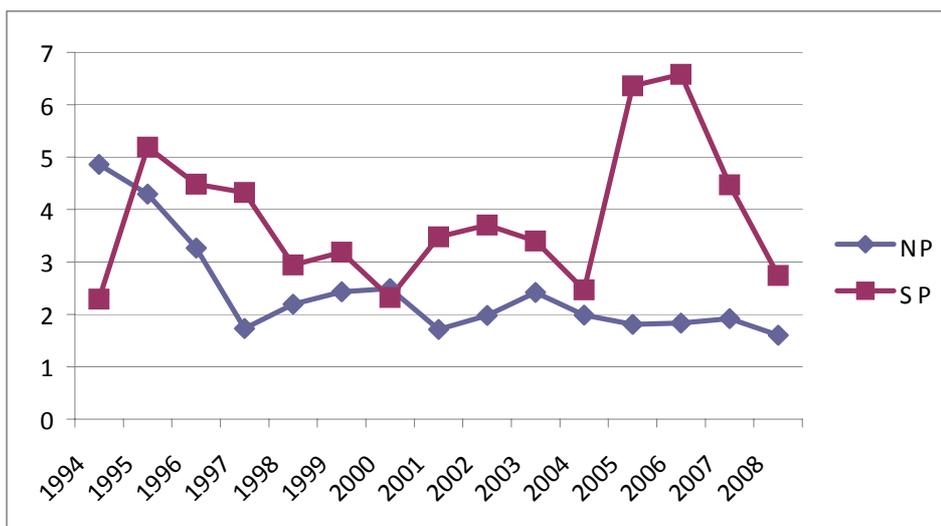
- Firstly, as regards internal accruals, SP's performance is indeed remarkable as regards both retained profit/sales and current assets/current liabilities ratios (see graphs 4 and 5 respectively).

**Graph 4 - Retained profit/sales (%) - Nicholas Piramal and Sun Pharmaceutical Industries**



Source: our elaborations on Prowess data

**Graph 5 - Current assets/current liabilities - Nicholas Piramal and Sun Pharmaceutical Industries**



Source: our elaborations on Prowess data

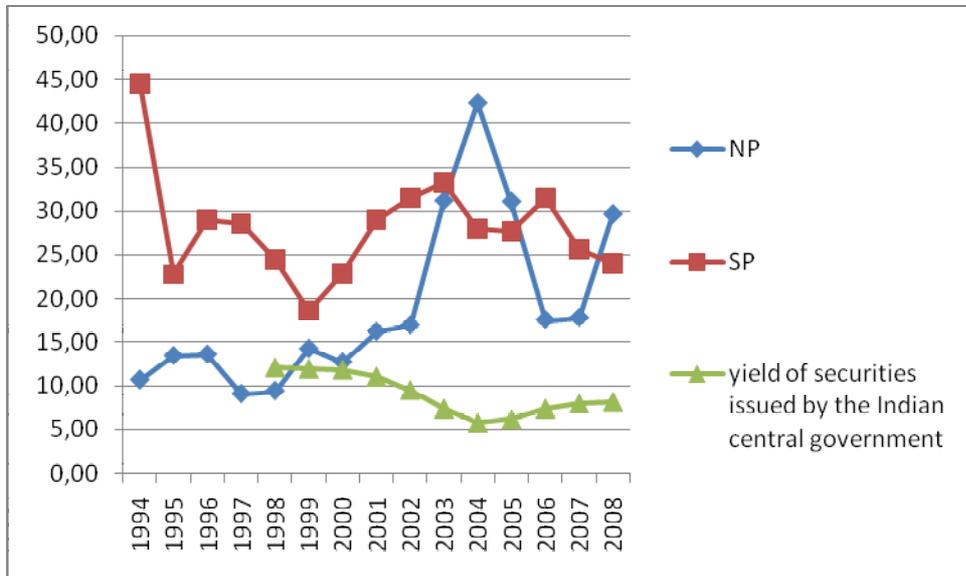
- Secondly, we can note that both our case study companies are listed at the Bombay Stock Exchange and at the National Stock Exchange<sup>32</sup>, and that the Indian stock market has been very dynamic in the last years. So for instance the Bombay Exchange capitalization increased from about 400 bln \$ of January 2005 to almost 600 bln one year later, and it became more than 800 in 2007 and more than 1400 in 2008 (Bombay Stock Exchange website)<sup>33</sup>. Our case study companies' performances in terms of profitability can also help them to raise money through the stock market channel. So the return on equity (ROE) generated by the companies in question is for instance much higher than the yield of the securities issued by the Indian central government in the corresponding years (see graph 6), while SP overperformed the average of large pharmaceutical companies as regards its level of profit after tax/sales for all the years when this comparison is possible, and NP did the same for most of them (see graph 7). In particular SP's capacity to raise funds through the stock market is attested by the circumstance that when it was listed in 1994, its initial public offering (IPO) was oversubscribed 55 times and the money generated by this operation (18 mln \$) could also be employed in the Caraco acquisition of 1997 (company interview).

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<sup>32</sup> Nicholas Piramal is also in the process of being listed abroad (company interview).

<sup>33</sup> For the changes in the relative importance of the world financial centres see Deaglio (2008).

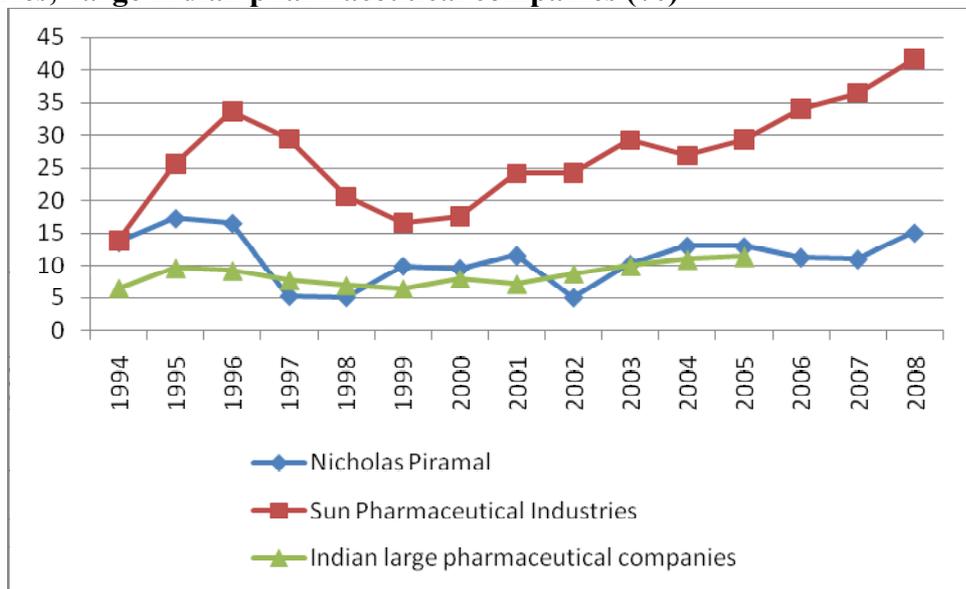
**Graph 6 - Return on equity (ROE) of Nicholas Piramal and Sun Pharmaceutical Industries (%). Yield of securities issued by the Indian central government\* (%)**



\*Weighted average yield released by the Reserve Bank of India.

Source: our elaboration on Prowess and Reserve Bank of India data

**Graph 7 - Profit after tax/sales - Nicholas Piramal, Sun Pharmaceutical Industries, large Indian pharmaceutical companies (%)**



Source: Nicholas Piramal and Sun Pharmaceutical Industries: our elaboration on Prowess data; large pharmaceutical companies: Pradhan, 2008 (on Prowess data)

- Thirdly, it is interesting to note that both Sun Pharma and Nicholas Piramal were able to raise financial resources abroad too. So, in 2004 a 350 mln \$ foreign currency convertible bond (FCCB) was issued by SP on the Singapore Stock Exchange (domain-b.com, 2004), while in 2003 NP used an external commercial borrowing (ECB) to raise 10 million \$, an operation placed with Rabobank International, Singapore. Other such borrowings were obtained by the company in the following years for a total value of 40 million \$<sup>34</sup>.

Coming to management skills, as regards NP the successive acquisitions that it performed on the Indian market offered the opportunity to learn a lot about how to carry out such operations and how to smoothly integrate different companies (Piramal et al., 2002). The successful devices elaborated in this context could be widely applied successively in the international environment, and indeed NP's management deems this ability one of the most important competitive strengths of the company (company interview). Its management learnt indeed a way to integrate manufacturing structures, product mix and distribution infrastructures, but also people, as well as to transfer the best practices across different units in every sphere of activity. Besides, it can be noticed that NP's top managers received part of their education abroad<sup>35</sup>. As regards SP, in 2003 it was included by AT Kearney-Business Today amongst the best performing companies in India across all sectors, and in 2005 Mr. Shanghvi, the company founder, chairman and managing director, was acknowledged by Ernst and Young "E&Y Entrepreneur of the Year" in the healthcare and life science category. Besides, in the first half of the 2000s SP was listed by Forbes four times in five years among the best 200 Asian companies (with sales less than 1 mln \$). It can also be mentioned that in 2008 Mr. Shangvi was 52,

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<sup>34</sup> Such ECBs are reported by the Reserve Bank of India in April and August 2007 (<http://www.rbi.org.in/scripts/ECBView.aspx>).

<sup>35</sup> So Mr. Piramal, the company Chairman, completed the Advanced Management Programme at the Harvard Business School (1992), while his wife, Ms. Piramal, the director of strategic alliances and communication, received her Master of Public Health from the Harvard School of Public Health

so he was very young when he started up the business in 1983, and in general the top management average age is quite young, being around 40-45 years.

## **2.5.Linkage and leverage: the external network**

Strategic alliances in the pharmaceutical sector include licensing and cross-licensing agreements, joint R&D projects, marketing agreements having as object products already approved by competent authorities, and equity investments often undertaken with contextual technology transfer (Prašnikar and Škerlj, 2006). The internationalization strategy followed by our two case-study companies broadly differ as regards their participation in international strategic alliances and in general in their establishment of linkages with third parties. A thick web of linkages has been indeed established by Nicholas Piramal since the time of its “acquisition campaign” on the Indian market (see Table 1 below), when such operations were often coupled with the establishment of strategic alliances with the parent companies of the acquisition’s target. On the one hand, this strategy allowed Nicholas Piramal to share risks and costs of R&D activities and to access the partners’ knowledge. On the other hand the alliances have contributed to raise the company’s reputation and the confidence of potential customers.

On the contrary, neither strategic alliances with foreign firms, nor the establishment of extensive linkages with institutional subjects such as Universities or public research centres represented important elements in SP’s development strategy<sup>36</sup>.

### **Table 1 Nicholas Piramal's web of linkages with incumbents and institutions**

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<sup>36</sup> We had this piece of information from our interview with the company management and found it is substantially confirmed by the company’s annual reports. As regards the relationships with research institutions only the edition of 2005 of the latter document mentions that several R&D projects of Sun Pharmaceutical “use the capabilities of academia/research in alliances that would best draw on their experience” (Sun Pharmaceutical Industries, 2005: 9) but no information is supplied about such alliances neither in this nor in other reports.

<b>A) Strategic alliances</b>			
<b>1) R&amp;D agreements</b>	<b>Partner</b>	<b>nationality of the partner</b>	<b>Year</b>
<b>with foreign companies:</b>	Napo Pharmaceuticals, Inc. (plant-screening agreement to develop and commercialize proprietary pharmaceuticals (diabetes therapeutic agents) for the global marketplace. Nicholas Piramal will utilize its screening facility, natural product chemistry expertise, biological testing capabilities to identify active compounds from Napo's library of medicinal plant extracts)	US	2006
	Merck (research and development collaboration agreement to discover and develop new oncology drugs for two selected targets provided by Merck)	US	2007
	Eli Lilly (2 agreements concerning new drug development that Nicholas Piramal would develop and, in certain regions, commercialize starting from a select group of Lilly's pre-clinical drug candidates that span multiple therapeutic areas)	US	2007 and 2008
	Pierre Fabre (collaboration in research on oncology)	France	2008
<b>2) In-license agreements</b>			
<b>For the Indian market</b>			
	Hoffman-La Roche (manufacturing and distributing all Roche products under the Roche brand name)	Switzerland	1993
	Ethypharm (paracetamol melt tablets drug delivery technology, especially for pediatric use)	France	2004
	Biogen Idec (marketing anti multiple sclerosis and psoriasis drugs)	US	2004
	Gilead Sciences (marketing antifungal agent)	US	2004
	Chiesi Farmaceutici (marketing a lung surfactant drug for infants)	Italy	2004
	Pierre Fabre (marketing dermatology and skincare products)	France	2004
	Genzyme Corporation (marketing an orthopaedics pain management drug)	US	2004
	Gruenthal (pain management drug manufacturing)	Germany	2004
<b>For foreign markets</b>			
	Minrad (distribution of inhalation anesthetic products in Russia, Ukraine, African and Middle East countries)	US	2003
	AstraZeneca (manufacturing and exporting antiscabies soap to selected countries)	Sweden	n.a.
<b>3) Equity agreements</b>			
	JV with Allergan (manufacturing ophthalmic products for India and since 2002 for export to other LDCs)	US	1995

	Jv with Reckitt & Benckiser (distribution in India)	UK - India	1998
	Jv with Alliance Boots (distribution of both companies' products – especially OTC ones - in India)	UK - India	1998
	Jv with Arkray Inc (distribution of diagnostic products in India)	Japan	2008
<b>B) Contract research (CR) and contract research and manufacturing (CRAM) agreements</b>			
	with Advanced Medical Optics (supply of ophthalmic products for advanced markets)	US	2003
	with Allergan (supply of ophthalmic products for foreign markets)	US	2004
	with AstraZeneca (development and manufacturing of API)	Sweden	2005
	with Pfizer Int. - Animal Health Div. (development and manufacturing)	US	2005
<b>C) Agreements with research institutions</b>			
	National Institute of Oceanography of Goa	India	n.a.
	Indian Institute of Chemical Biology of Kolkata	India	n.a.
	Central Drug Research Institute of Lucknow	India	1998
	Centre of Biochemical Technology	India	2001
	Indian Institute of Science of Bangalore	India	2004
	RRL of Jammu (part of the Council for Scientific & Industrial Research)	India	2004
	Anna University of Chennai	India	2004
	National Research Council of Canada	Canada	n.a.
	NIH	US	n.a.
	Oncotest	Germany	n.a.
	De Montfort University	UK	n.a.
	Partnership with 9 National research institutes	India	2008

Sources: Nicholas Piramal website; company interview; Nicholas Piramal, 2007; Allergan India website; Pradhan, 2006; domain-b.com, 2005; *The Financial Express*, 9 October 2004, <http://myiris.com>.

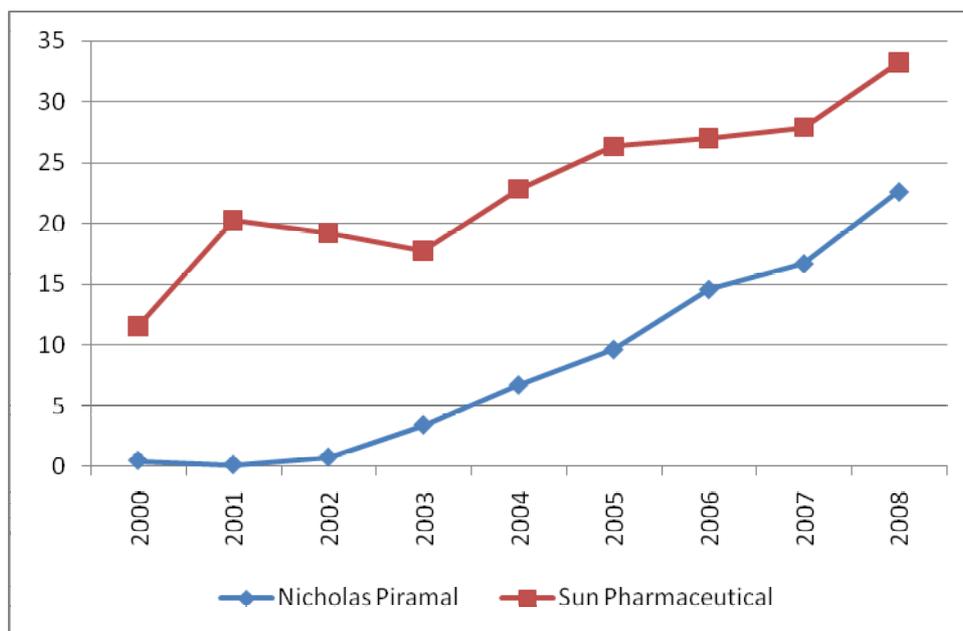
## 2.6 The internationalization process: exports

As regards the internationalization process of Nicholas Piramal, it has to be noted that in the early 2000s exports were still insignificant for the company, as illustrated by graph 8 below. Also thanks to both the alliances that NP has woven with foreign partners, and to its international expansion via FDI, which offered the opportunity to increase captive exports, exports substantially grew during the 2000s. NP's sales outside India/total sales ratio increased even more than exports

during the 2000s. Besides, while in 2003 exports and operations of foreign subsidiaries were still “not significant” (Nicolas Piramal, 2003: 254), in 2008 over 44 per cent of consolidated revenues came from outside India (Nicholas Piramal, 2008).

Sun Pharmaceutical’s internationalization substantially developed during the current decade, as illustrated by graph 8 below. The company started exporting in 1989, selling pharmaceutical products in countries neighbouring India (Kale, 2008). The high level of internationalization reached by the company reflects in its foreign/total sales ratio, amounting to 54.8 per cent in 2008. As regards its geographic coverage, in 2008 about 1,000 registered products of Sun Pharmaceutical were sold in about 30 countries (company website). US represents the second largest part of the company’s business, with the oldest subsidiary in the country generating sales for to 350 mln \$ (Sun Pharmaceutical Industries, 2008). While APIs are sold mainly in regulated markets (US and Europe), it seems that the penetration of formulations in the regulated markets different from the US is still in its initial phase. While the first concrete move in this context was done with the acquisition of a manufacturing unit in Hungary (see further), other plans concerning Europe are in course of development. The latter include focusing on three key markets (UK, France and Germany) and working on complex generic products to be filed from India. Besides, the company does not plan a direct market presence in these countries, but since 2005 it has been looking for a partner to develop this activity. As regards the other foreign markets, the focus areas are CIS, China, SE Asia, South Africa, Brazil and Mexico.

**Graph 8 – Nicholas Piramal and Sun Pharmaceutical – Export/sales (%)**



Source: our elaboration on Prowess.

## 2.7. Internationalization through FDI: the internal network

The foreign investments undertaken by Nicholas Piramal and Sun Pharmaceuticals have developed according to what is illustrated in Tables 2 and 3.

**Table 2 – Sequence of foreign investments undertaken by Nicholas Piramal**

Operation carried out in	Mode of entry / company name	Country	Value of investment	Activity
2004	Acquisition of the inhalation business of Rhodia Organique Fine Limited	UK	14 mln \$	Manufacturing of inhalation anaesthetics
2005	Acquisition of 17.5% of Biosyntech	Canada	6 mln \$	R&D (in future also manufacturing)
2005	Acquisition of Avecia Pharma (UK) (formerly part of AstraZeneca), now called Nicholas Piramal Pharmaceuticals	UK	17 mln \$	R&D; API and formulation manufacturing; custom manufacturing; also developed proprietary process technology
2005	Acquisition of 100% Torcan (through the acquisition of Avecia)	Canada	Part of Avecia Pharma's acquisition	Manufacturing (biotechnology field): custom manufacturing for biotechnology and mid-size pharmaceutical companies; niche APIs
2005	Acquisition Of 25% of Reaxa Limited (through the acquisition of Avecia)	UK	Part of Avecia Pharma's acquisition	Custom manufacturing (also using proprietary process technology developed by Avecia Pharmaceuticals in collaboration with Cambridge University).
2006	Acquisition of a Pfizer manufacturing unit in Morpeth	UK	not disclosed	API manufacturing and contract manufacturing; R&D
2006	Establishment of a sourcing office in Shanghai	China	n.a.	Sourcing office
2009	Acquisition of Minrad International	US	40 mln \$	Manufacturing of generic inhalation anesthetics

The FDIs undertaken by Nicholas Piramal seem to be inspired by a few main aims. Some of them go towards the direction of specializing in the inhalation anaesthetics business and in accessing hospitals as target customers. It is the case of the operations regarding Rhodia (UK) and Minrad (US). Other investments carried out abroad strengthened the company's CRAM business: among them we can mention the acquisition of Avecia Pharmaceuticals (and – through it – that of Reaxa (UK), and Torcan) and the one targeting the Morpeth (UK) unit of Pfizer, that included an agreement with the latter thanks to which Nicholas became one of the biggest contract manufacturers of the MNC. Some operations also gave the Indian company access to critical technologies, as in the case of Avecia, that had developed them in collaboration with Cambridge University, and in that of BioSyntech (Canada) a company focused on discovery, development and manufacturing of "biologic implants for therapeutic delivery and regenerative medicine" (company website). In addition, the operation carried out in China in 2006 clearly had a resource seeking motivation.

Looking at the relationships between parent company and subsidiaries, that is at the way in which the internal network of this MNC is organized, it can be observed that Nicholas Piramal in the international context applied some of the devices developed in occasion of the previous acquisition campaign carried out on the Indian market. So, elements of strong co-ordination emerge with reference to the homogenization of the IT structure and the accounting procedures across units undertaken immediately after every such operation (interview). Indeed IT was widely used for internal governance and decision making, both to share success stories and to make it possible to constantly monitor all units and functions performances (Piramal et al., 2002). This system allows the headquarters to intervene early when an underperformance is noticed in a foreign unit. Personnel mobility is strongly encouraged through the Career Opportunity Program, that, aiming at “home growing” the company’s future leaders, gives employees of all units the first opportunity to apply for new positions that are created within the whole organization due either to resignations or to setting up of new structures (Nicholas Piramal, 2008).

As regards Sun Pharmaceutical Industries’ expansion through FDI, the following table illustrates the momentum gained by this process during the current decade.

**Table 3 - Sequence of foreign investments undertaken by Sun Pharmaceutical Industries**

<b>Year</b>	<b>Mode of entry / company name</b>	<b>Country</b>	<b>Value of investment</b>	<b>Activity</b>
<b>1993</b>	Establishment of a 100% subsidiary	Russia	n.a	Marketing
<b>1994</b>	Establishment of a representative office	Ukraine	n.a	Marketing
<b>1995</b>	Establishment of representative office	Belarus	n.a	Marketing
<b>1997</b>	Acquisition of 30% stake in Caraco (Detroit, Michigan). Successively further shares of Caraco's capital were bought; in 2004 SP's stake in Caraco was 44%; in 2008 Caraco was a 70% subsidiary of SP	US	8	Manufacturing and R&D
<b>2001</b>	Establishment of a 72.5% Jv Sun Pharmaceutical with the local partner City Overseas Ltd	Bangladesh	n.a	Manufacturing
<b>2005</b>	Acquisition of the manufacturing facilities of Able Laboratories located in Cranbury (New Jersey)	US	23	Manufacturing of controlled substances (API) and R&D
<b>2005</b>	Acquisition of the manufacturing operations of the US company Valeant Pharma in Hungary. The acquired unit is renamed Alkaloida	Hungary	10	Manufacturing of controlled substances (APIs and formulations)

<b>2006</b>	Acquisition of a plant manufacturing pharmaceutical products from Valeant Pharma (Bryan, Ohio)	US	n.a	Manufacturing
<b>2007</b>	Acquisition of Taro (not yet finalized)	Israel	454	Generic manufacturing; R&D
<b>2008</b>	Acquisition of Chattem Chemicals Inc	US	not disclosed	Manufacturing of controlled substances (API)

The first foreign operations of Sun Pharmaceutical were carried out as greenfield investments overseas in the early 1990s, basically to develop marketing activities. In 1997 the company made its first acquisition in the US, targeting a making-loss enterprise manufacturing generic formulations, Caraco Pharm Labs. It is interesting to note that this operation was carried out as a technology-for-equity agreement, that in the course of time led Sun to reach a stake of 76 per cent in the US company<sup>37</sup>. Several other operations followed in the US, often targeting companies in bad financial conditions. The one concerning Women's First Healthcare represented Sun Pharma's first move in the field of branded generics, as the brands acquired already had a certain recall on the market (Kale, 2008; Sun Pharmaceutical Industries, 2005). A motivation underlying a few FDIs carried out by the Indian company consisted in enlarging the company's basket of complex products both in the formulation and in the API businesses. This is the case of the acquisitions of Alkaloida Chemical Company in Hungary, and of Valeant's unit and of Chattem Chemicals in the US. In 2001 a JV was established in Bangladesh with a local partner to manufacture pharmaceutical products for the local market.

## 2.8. What conclusions from these two case studies?

- If we look at the presence of a competitive advantage represented by technological innovation, the evidence we presented in this section leads us to conclude that the internationalisation process of our focus companies clearly started, in the early 1990s and at mid 2000s as regards SP and NP respectively, in absence of an ownership advantage deriving from their proprietary technology, as measured by patents. However, if we look at indicators such as R&D expenses, R&D staff, patent activity and number of NCE in their pipeline, it has to be noted that our case study companies have been developing a not negligible innovative capacity contextually with their internationalisation process. Even if not consisting in a strong patent activity, technological capacities represented an important competitive advantage that both Nicholas

<sup>37</sup> Such agreement granted the Indian company a certain number of Caraco's shares in exchange for every transfer of technology formula for pharmaceutical products to Caraco itself (Sun Pharmaceutical Industries, 2003).

Piramal and Sun Pharmaceutical Industries exploited for their internationalisation, as maintained also by the companies' management. So Nicholas Piramal's R&D internal capacities allowed the company to develop both alliances with established MNCs and a contract research and manufacturing activity for the latter. Indeed, as Narula (2006) remarks, to enter business relationships with other firms incumbents must find that the latter offer them something (amounting to a kind of competitive advantage). On the other hand, the importance of Sun Pharmaceutical Industries' strong development capacities for its internationalisation process are proved, for instance, by the circumstance that its acquisition of the US company Caraco was largely performed through a technology for equity agreement.

- Drawing on the figures we offered in this section concerning the differentiation capacity, as measured by our focus companies advertising and marketing expenses we can again conclude that these companies started their operations abroad without possessing advantages of this kind. This in general confirms the common vision that developing country firms lack powerful brands and differentiation capacity. Also in this case, however, as in that of technological capabilities, several elements illustrated in what precedes allow us to claim that our focus companies have been increasing their differentiation capacity in parallel with the internationalisation process they have been getting involved with, and that, in a certain measure, by developing that process they were also able to exploit such resource.
- As regards financial resources, which one could expect to represent a constraint in the case of firms based in a country that – despite a strong economic growth – remains part of the developing world, to find the capital necessary for their international expansion apparently does not represent a problem for our case study companies. The profits, and the returns they have generated for their investors in the latest years, joined with the positive trend of the Indian stock market seem to support what they claim. Besides, the circumstance that they are also able to access the international financial market seems to confirm that their brand image, together with their good business records, are now recognized also abroad (Pradhan, 2006).
- In the case of SP managerial skills are attested by a certain number of acknowledgments; in that of NP the company management includes such skills among the competitive advantages that the company could ground its international expansion upon.
- Nicholas Piramal's way to proceed shows a strong propensity to establish linkages with foreign companies, which is done through CRAMs contracts, non equity and equity agreements.

Besides, NP shows an extensive web of relationships with both Indian and foreign research institutions. Sun Pharmaceutical Industries seems on the contrary to have approached the internationalisation process without entering a network of strategic alliances or developing the outsourcing business. The “leverage of the resources of others”, to use Matthews’ terminology, happened when the company made use of acquisitions as an entry mode first to develop on the domestic market and then in the course of its international expansion.

- As regards NP, some elements of strong coordination (IT structure, accounting procedures, for instance) are “imposed” by the parent company to the foreign subsidiaries. The latter, however, do not resemble much the “classical” foreign units basically devoted to exploiting abroad the competitive advantages possessed by the parent companies. On the contrary, some FDIs carried out by this company clearly have an asset seeking nature, which is the case when R&D resources are accessed through foreign operation (such as in the partial acquisitions of Biosyntech, Canada, or of Reaxa, UK) but also when the latter allows to access a distributive network (such as that of hospitals, as it happened in the case of Rhodia’s acquisition).

### **3. Empirical evidence on Indian Multinationals: The case study of the automotive industry**

The Indian automotive industry evolved from a highly protected sector in the 1980s, towards the liberalisation process of the 1990s and the new competitive scenario of the 2000s.

The first automotive production in India was developed by Ford and General Motors, that opened assembly units since the 1920s. In the 1940s few local enterprises made local assembly under license (Kim, 2004). In 1954, Hindustan Motors was the first local manufacturer, with the model Ambassador, produced in India under license of the British carmaker Morris, and adapted to the local market.

Since the early 1980s, India started a gradual process of modernisation, opening markets to competition and promoting exports. In 1982, a turning point was represented by the creation of the JV between Maruti Udyog Ltd, a State-owned company that had not been able to make its production take off, and the Japanese multinational Suzuki Motor Company. This JV deeply affected the production system and technology standards in the Indian automotive industry. In a few years, since the second half of the 1980s, it represented a market share superior to 50 per cent. A very important flow of technology characterised this alliance. Several Japanese suppliers of Suzuki invested in India and started their production operations. New technology was introduced, as well as

new design and management systems. In 1985 the need for a license for new investments in the commercial vehicle sector was abolished, and the existing producers were allowed to enlarge their production capacity. Therefore the main manufacturers started to diversify their production (Singh, 2004, Becker-Ritterspach, 2006). Other deregulation measures followed.

Since 1991, the automotive industry was involved in the deregulation process, and foreign investments were allowed up to 51 per cent for commercial vehicles and for component production. FDIs developed rapidly after the liberalisation and many multinationals entered the market, including Ford, Honda, Fiat, Daewoo and Hyundai. Almost all these newcomers operated through JVs, in which the foreign partner had usually the managerial power and control over technology. In the following years most foreign multinationals would acquire the control through majority ownership (Kim, 2004).

In the 1990s as well, some Indian corporations that had operated in other segments of the automotive industry or in other industries, entered this market and quickly acquired technology and signed international agreements. It is the case of Tata Group, while Mahindra & Mahindra started the production of passenger cars thanks to a collaboration with Ford.

In the new century, the growth of the Indian automotive industry – though curbed by poor infrastructure, in particular as regards the road and highway system – has been pushed by the growth rate of the Indian economy. A new policy was released to promote the automotive industry, and in particular to reach the following two targets (Government of India, 2002: 2):

- a. to develop ‘an international hub for the production of small and economically accessible cars’
- b. to create a ‘global source for automotive components’.

The segment of small cars is dominant in today’s landscape of the Indian automotive market, but growing income and the availability of cheap credit allowed for the growth of the upper segment of demand (Richet and Ruet, 2006). The position of Maruti, even if decreasing, is still dominant, with more than 46 per cent of the market, while new investments have been made by other domestic and foreign companies, such as Tata and Honda.

The segment of automotive component suppliers is represented by a large number of players: more than 500 are the ‘organised’ ones, and more than 5,000 are part of the ‘unorganised sector’. The relationships between assemblers and component suppliers have been deeply affected by the entry into the Indian market of the big multinational carmakers that imposed new quality standards and induced a concentration process in this segment (Humphrey and Salerno, 2000; Kim, 2003).

These partnerships have been a major channel for technology transfer and acquisition by Indian enterprises. Japanese enterprises have been the most active partners, taking part in the early 2000s in 145 partnerships out of a total of 482 (Kim, 2003). Partnerships and acquired technologies have been the condition for a subsequent expansion abroad, in a first stage through export and in a second stage through FDI and international production (Banik and Bhaumik, 2007).

We'll now focus on the domestic corporations which were able to go multinational, after a process of acquisition of both technology and organizational competencies, Mahindra&Mahindra and Bharat Forge Ltd.

### **3.1 Mahindra & Mahindra and Bharat Forge: structure and evolution**

- Mahindra & Mahindra Ltd (M&M) was established in 1945 by the Mahindra brothers along with an external partner. At that time it represented in India the US company Willys Overland Motor Company, manufacturer of the jeep (Kathuria, 1996). The licensed capacity at mid 1950s was of 2,500 jeeps per year (company web site). In the mid 1960s the company entered the commercial vehicle business. Over the years the Mahindra group developed, emerging as one of the most important examples of Indian family-owned diversified conglomerate group, so to be included today among the top 10 industrial houses in India. It employs more than 50,000 people and has a turnover of over 6 billion US \$ a year (company website; Mahindra & Mahindra, 2008). As a result of the restructuring started in 1994, the group is organized in business units, whose activities range from the automotive sector to infrastructure, from IT to financial services (Stewart and Raman, 2008). M&M, the flagship company of the group, includes the automotive and farm equipment units. Strong cooperative relationships exist among the different units and enterprises which are part Mahindra. As regards M&M in particular, there are strong synergies with the financial sector of the group, and with the companies active in the logistic and in the sourcing business (interview). The IT competencies present in the group are also employed by M&M, for instance to interconnect the points of its distributive network (650 dealers and 49 sales offices in India; SIAM, 2008). Besides, strong interaction is present with the Mahindra group business unit focused on the automotive component segment, called Systech, that works also as engineering service provider, relying on a staff of over 600 engineers working in the automotive domain<sup>38</sup>.

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<sup>38</sup> Systech, as well as the Mahindra companies operating in the other aforementioned business, work both for the different business units of the group itself and for external customers. Among Systech's customers both Indian – like Tata Motors – and global car manufacturers – like Ford or GM – can be counted (interview).

M&M's automotive production is carried out in five plants in India and includes sport vehicles (SUVs), light commercial vehicles, three-wheelers and passenger cars, the latter manufactured in JV with Renault (see further); in addition a farm equipment sector is also part of M&M, manufacturing tractors and equipment<sup>39</sup>. In 2008 the automotive and the farm equipment segments respectively represented about 63 per cent and 35 per cent of the company revenues. In the same year, employing about 14,000 people, M&M sales amounted to 3.2 billion \$ (the trend of the company sales is illustrated by graph 9). In 2007 M&M was the market leader on the utility vehicle market (market share: 41 per cent), and had a market share of 24 per cent on the LCV, ranking second after Tata (65 per cent) (SIAM, 2008). The launch of the Logan model in India, manufactured by M&M in JV with Renault, was quite successful, with sales recording 26,000 units in its first year on the market (2008), and a market share of 11.2 per cent in the midsize car segment (Mahindra & Mahindra, 2008). As regards tractors, India represents the world's largest market and in 2008 M&M was its leader for the 25th consecutive year, with a market share of 30 per cent (Mahindra & Mahindra, 2008). In the same segment, in 2008 the company ranked 3 at global level.

- Bharat Forge (BF) was established in 1961 to manufacture forgings for two different sectors: the nascent automotive industry and the diesel engines used in the farm equipment industry. It is the flagship company of the family group Kalyani, and the Kalyani family owns 51 per cent of its equity. The group's activities today range from forging to auto components, from renewable energy and engineering steel to speciality chemicals. The group employs about 10,000 people worldwide and its turnover amounts to 2.4 billion \$. BF's main business is the manufacturing of components, both in steel and aluminium, for commercial vehicles, tractors and passenger cars. Other automotive component manufacturer companies, outside the forging business, are part of the Kalyani group<sup>40</sup>. The company business, started at the time of the Indian import substitution policy, consolidated in the following years when India was virtually

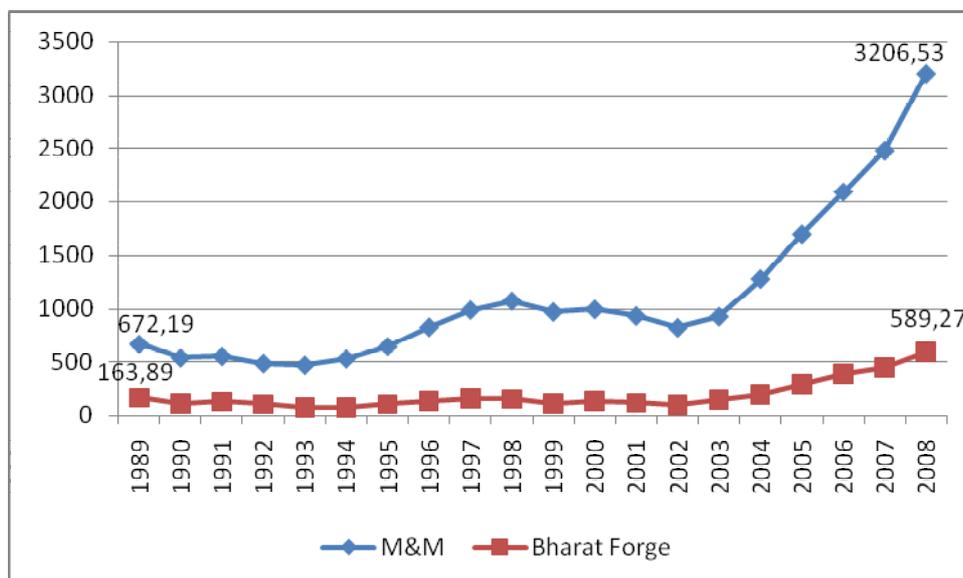
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<sup>39</sup> In 2007-2008 production figures for the automotive segment of the company were as follows: 11,079 light commercial vehicles (LCVs); 34,556 three-wheelers and 26,653 cars (including in the latter figure pick ups, SUVs and passenger cars), in addition to 98,917 tractors and 31,922 industrial engines (Mahindra & Mahindra, 2008).

<sup>40</sup> Among these auto part manufacturers there are the JV Kalyani Lemmerz, established by Kalyani Group with Lemmerz (US) – world leader in wheel rim technology and among the largest manufacturers of this kind of products at global level – to manufacture wheel rims for utility vehicles, light and heavy commercial vehicles and tractors; and Automotive Axles, a JV of Kalyani Group and Arvin Meritor Inc., USA, manufacturing axle assemblies (Hayes Lemmerz web site).

closed to external competition<sup>41</sup> and further consolidated when the liberalization took off in India, and BF was able to exploit the opportunities offered by this very process. Today the company can manufacture every kind of forging piece for the above mentioned sectors, but it focuses in fact on some specific niches, in some of which it holds a high market share. So in 2008, besides being the largest forging company in Asia, BF was the leading company on the Indian market of axle and engine components, holding a market share of 80 per cent. Besides, in 2006 it was the second largest producer of forgings for car engines and chassis components in the world (*The Economist*, 10 June 2008). The company has recently begun a diversification process in the non-automotive sector – in particular in aerospace, oil and gas, energy, rail, marine, mining and infrastructure – which in 2008 represented about 18 per cent of its consolidated turnover (Bharat Forge, 2008). The company goal is however to further diversify its business, in order the non-automotive part of it to reach 30 per cent of its turnover (interview)<sup>42</sup>. In 2008 Bharat Forge had standalone sales amounting to 589 million \$ (for the trend of this indicator see graph 9) and a consolidated income of 1.2 bln \$ (Bharat Forge, 2008). In the same year BF employed 4,500 people.

**Graph 9- M&M, Bharat Forge – standalone sales (mln \$)**



Source: our elaboration on Prowess data

### 3.2. Competitive advantages: Technological innovation

<sup>41</sup> The close family ties of the Kalianys with the promoters of some leading companies in the sector, such as the Tatas and Kirloskars, played also a role In this process (Knowledge@wharton, 2007, 15 February).

<sup>42</sup> The JV established in 2008 with India's state-run power producer NTPC Ltd, to manufacture castings and forgings used for power plants, represents a move in that direction, in particular as regards the segment of capital goods (reuters web site).

- During the 2000s M&M devoted increasing resources to internal R&D activities relative to the previous decade, but R&D expenses over sales ratio still remains modest, amounting to 1.68 per cent in 2008 (see graph 10 below).
- As regards the external sources of technology, the value of imported capital goods in 2007 was about 0.72 per cent of gross sales, but in the last five previous years this figure ranged from 7.3% of 2002 to 0.53% of 2004 (company annual reports). The transactions concerning the import of disembodied technology strongly increased in the last years<sup>43</sup>, which proves an increasing engagement of M&M in its technological upgrading<sup>44</sup>. Technology transfer from foreign companies occurred also through domestic acquisitions such as that of Automotive Pressing Unit from the UK company GKW, occurred in 1989. It is also worth noting that in the course of time some foreign companies took a stake in M&M. So in the early 1980s the US companies American Motor Corporation<sup>45</sup> and International Harvester hold a stake in M&M of 8 and 6 per cent respectively (Lall, 1983b). Besides, Ford took a participation in M&M capital too, amounting approximately to 5 per cent in 2005, the year when it was sold. The presence of foreign partners among the shareholders can also have represented a channel for the acquisition of foreign technology.
- Starting with the agreement with Willys Overland Corporation (US) in the 1950s, several collaborations with foreign partners have contributed to the improvement of M&M's technology level in the course of time (see further section 3.6).
- Concerning other indicators that can signal a company innovation level, such as certifications and awards, as back as the late 1990s four M&M Indian manufacturing plants were certified ISO 9002. In 2008 extensive certifications were possessed by many plants of the company<sup>46</sup>. In addition, several prizes recognized M&M achievements in the field of total quality and innovation, as outlined by table 4.

**Table 4 - Awards received by Mahindra & Mahindra in the field of innovation and total quality**

Year	Award received
2003	Deming Application Prize to M&M farm equipment unit in recognition of the commitment to TQM practices, customer focus, commitment to TQM practices and improving product and process quality

<sup>43</sup> The number of such transactions passed from one or two transactions in the years from 1999 to 2003, to nine transactions in 2004, seven in 2005 and eleven in 2007.

<sup>44</sup> The aforementioned imports regarded aspects such as the design of 4 wheel drive, the antilock braking system or the common rail diesel on utility vehicles.

<sup>45</sup> This company that had bought Willys Overland in 1970.

<sup>46</sup> So the tractor plants were certified S 16949, ISO 14000 and OHSAS (Occupational Health and Safety), while the auto plants were certified ISO 14001:2004 (Environmental Management System) (company annual reports; ICMR, 2005).

2003	National Award for Research and Development for manufacturing the first indigenously developed SUV, Scorpio
2006	'Indian Innovation Award 2006' to M&M farm equipment sector for 'reducing time to market in New Product Development
2007	'Outstanding Innovation Award' from American Society for Agricultural and Biological Engineers, USA, to M&M farm equipment unit for innovative products for the Shaan vehicle.
2007	Japan Quality Medal awarded to M&M farm equipment unit by the Union of Japanese Scientists and Engineers for excellence in Total Quality Management.
2008	Golden Peacock Award to the All New Mahindra Scorpio for Innovative Product / Services in the Automobile segment
2008	Golden Peacock Eco-Innovation Award for the Bijlee, an all electric zero emissions vehicle

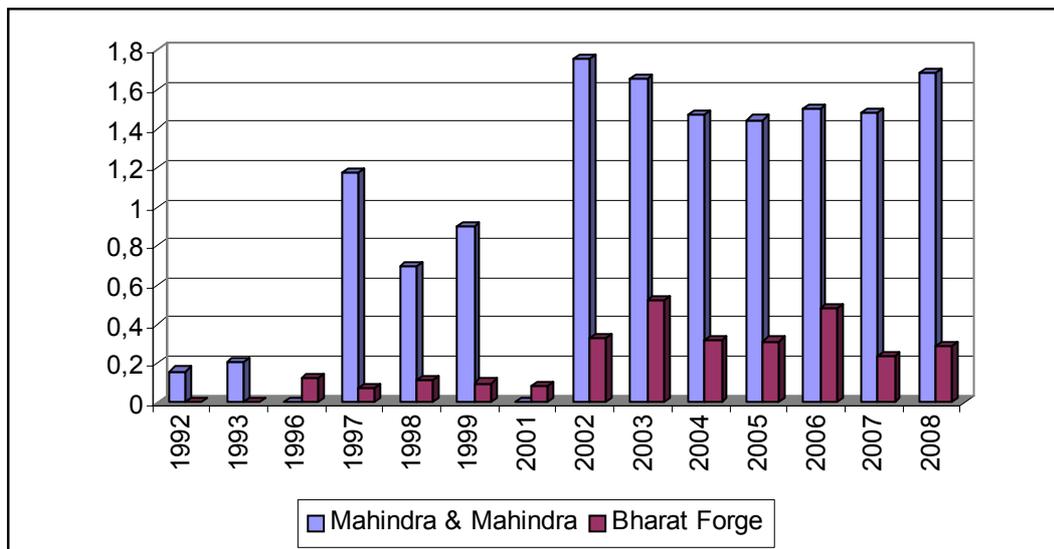
Source: annual reports.

- BF's investment in R&D, though increasing in the 2000s with respect to the previous decade, remains low: the R&D expenses/sales ratio amounted only to 0.29 per cent in 2008 (see graph 10 below). However, engineering and product development activities could not be included in the R&D figures.
- As regards proprietary technology, the only patents that can be found when looking for BF's applications were in fact filed by Carl Dan Peddinghaus, a company that our case study firm acquired in 2003. This confirms that this foreign operation had (also) an asset seeking motivation.
- Also in the case of BF, agreements with foreign companies, represented a way to access technology. In the course of time several such agreements were signed, above all with Japanese companies (see further table 6)
- Import of equipment has also to be mentioned with reference to BF's technology sourcing. So in 1988 the company invested two thirds of its income of that year in a German-engineered state of the art plant (Knowledge@wharton, 2007). During the 1990s and early 2000s equipment was sourced abroad from Germany and Japan, which gave the company the possibility of upgrading its technological level, as seen above, growing "from a primarily automotive ancillary to an engineering enterprise" (company web site), as well as to expand its production capacity.
- The quality of BF productive process was indeed attested as back as the 1990s with the certifications ISO 9002 (obtained in 1993) and QS 9000 (obtained in 1999). In 2008 the company is certified also ISO/TS 16949:2002, ISO 9001:2000 & ISO 14001. In addition, quality circle and other management techniques such as TQM and Kaizen are implemented, as well as specific programmes to find out and spread best practices (interview; company presentation).
- Automation was widely introduced since the late 1990, so that in the early 2000s the company had fully automated press lines and CAD/CAM systems (Bharat Forge, 2003). In addition, since

then it has made a wide use of IT technologies, introducing a virtual manufacturing system and an integrated supply chain management system. The technological level incorporated in BF's manufacturing process is also among the factors that allowed the company to scale up the value chain and increase the importance of machined components in its business<sup>47</sup>, reducing that of raw forging.

- To make the most of the new technologies adopted, the company needed to improve the education level of its workforce, the dimension of which could consequently be reduced (Knowledge@wharton, 2007). Indeed, as a result of an employment reduction and partial replacement at the end of the 1990s<sup>48</sup>, the share of white collar workers increased from about 15 per cent to 85 per cent. Besides, in 2008, while only 120 people were employed in R&D activities, BF employed about 2000 engineers worldwide (company interview; company presentation). In connection with the importance attributed to the human resource, BF has undertaken specific programmes of talent scouting and staff training, developed in collaboration both with foreign universities (in the UK, Germany and Sweden) and with technical colleges in Indian rural towns (*Fortune*, 29 October 2007). As a result, the company enjoys the edge represented by an educated high quality workforce, whose remuneration – though apparently not so distant from the European levels for the management – still offers a cost differential as regards the lower positions (interview).

**Graph 10 - M&M, Bharat Forge – R&D expenses / sales (%)\***



Source: our elaboration on Prowess data.

<sup>47</sup> Machined components accounting for 44 per cent of BF's sales in 2001-2002 from 26 per cent in 1996-1997 (Bharat Forge, 2002).

<sup>48</sup> The reduction of about 1,000 units of the workforce carried out at the end of the 1990s also contributed to this change. As a consequence of such reduction in 2002 Bharat Forge employed 2,521 people (Bharat Forge, 2002).

\* The historical series presented in this graph is not complete because data for some years were not available.

### 3.3 Competitive advantages: Financial resources

With reference to M&M we can observe what follows:

- The capacity to generate financial resources that can be employed in its internationalisation growth, proxied by the retained profit/sales ratio as well as by the current asset/current liability ratio, is illustrated by graph 11 and 12 respectively.
- Concerning the channel of financing represented by the stock market, M&M was listed on the Bombay Exchange as back as 1956 and successively also on the National Stock Exchange. In the dynamic context of the Indian stock market, in the recent years the company performed well: also as a result of its good ROE performance in the 2000s (see graph 13), the company stock price has risen 20 fold in the past seven years, against the doubling of the Sensex index of the Bombay Stock Exchange in the same time span (Stewart and Raman, 2008).
- Among the means to finance its overseas operations M&M turned also to FCCBs issues, such as those of 1996 (115 mln \$) and 2004 (100 mln \$, oversubscribed). Besides, it joined its forces with those of venture capitalists, such as ICICI (*The Times of India*, 30 April 2004).
- In evaluating the capital availability of the company it is also appropriate to consider the favourable position that M&M enjoys as part of a group that operates also in the finance as well as in the trade and retail sectors<sup>49</sup>. Lastly, it can be interesting to remark that Mr. Anand Mahindra, vice chairman and managing director of M&M, owns also a stake in the commercial bank Kotak Mahindra (Kotak Mahindra web site).

As regards BF:

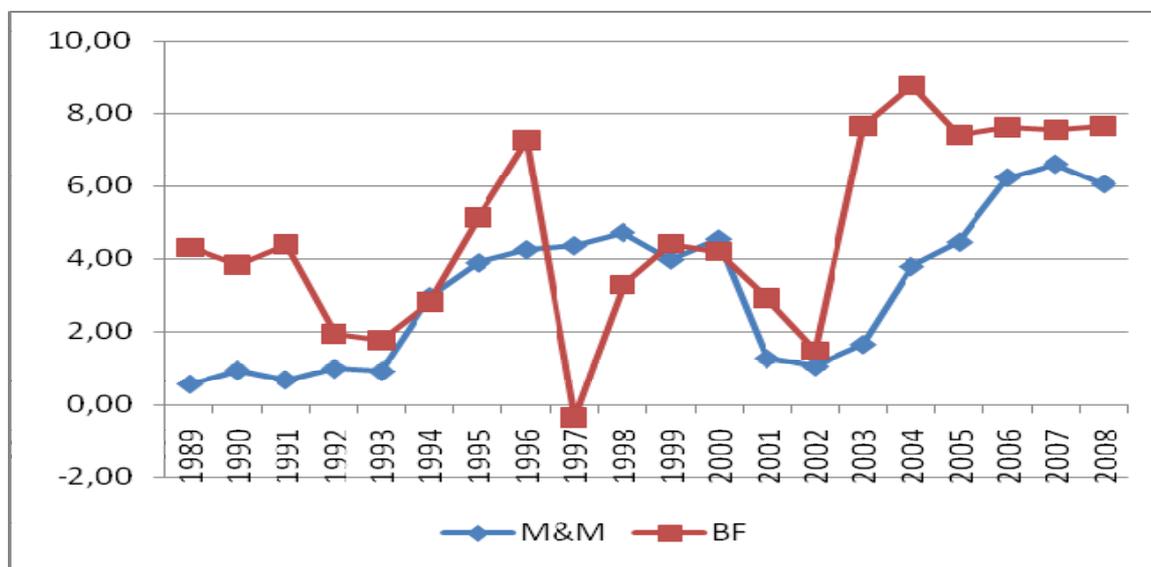
- The company's international growth was financed through internal accruals (for instance in the case of the acquisition of the German company Carl Dan Peddinghaus; *The Hindu Business Line*, 23 November 2003) but also with money that has been raised on the international financial market. So FCCBs were issued in 2006 and 2005 respectively for a total amount of 80

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<sup>49</sup> Two business units of Mahindra Group indeed operate in the above mentioned businesses. As regards the financial sectors, the business unit in question includes a retail finance company, an insurance company and a housing finance company. Concerning the other aforementioned field of activity it has to be reminded that trading in steel has represented a business of the Mahindra Group since the late 1940s. Today a Mahindra company (Mahindra Intertrade Limited) is specialised in imports and exports of commodities, domestic trading, marketing and distribution services. In addition the group is developing a retail sector, Mahindra Retail, operating in the toy games and apparel distribution under licenses from various international brands like LEGO, Disney and Mattel (company web site).

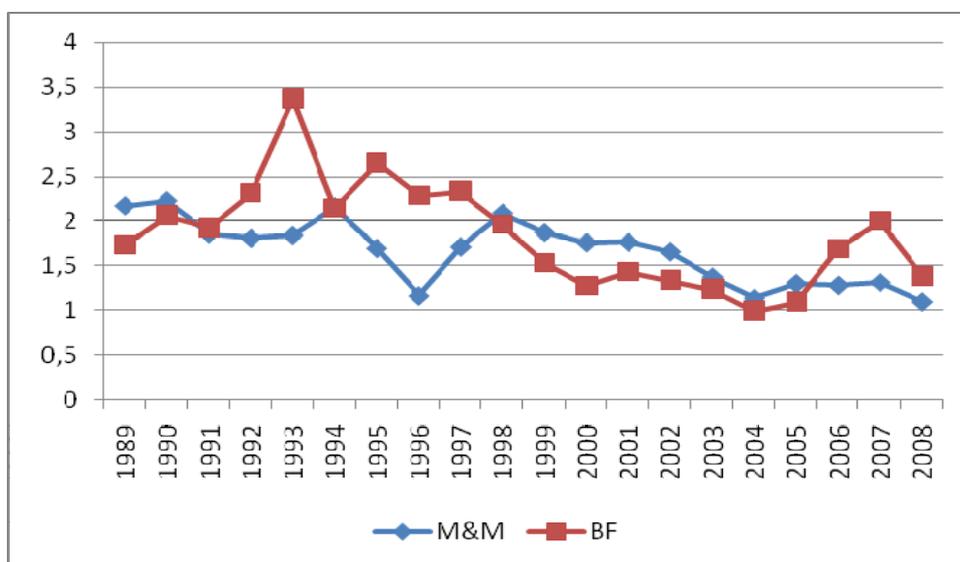
and of 120 mln \$, which the company in part used to finance its international expansion (Bharat Forge, 2008). Besides, external commercial borrowings were obtained by the company in 2004 (30 mln \$) and in 2008 (50 mln \$) (Reserve Bank of India).

**Graph 11 Mahindra & Mahindra, Bharat Forge - Retained Profit /sales (%)**



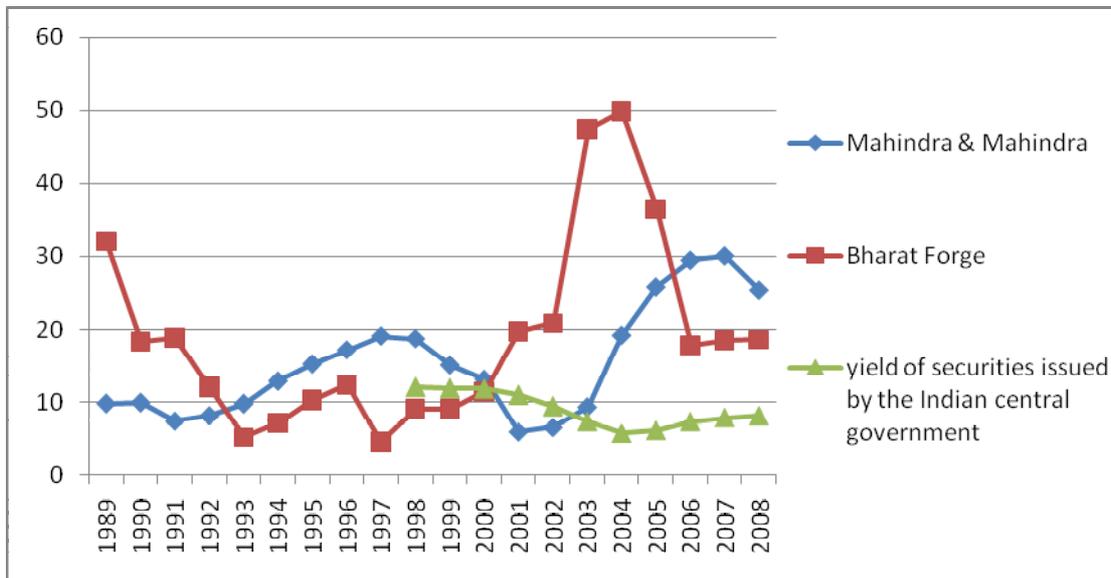
Source: our elaboration on Prowess data.

**Graph 12 – Mahindra & Mahindra, Bharat Forge – Current assets/current liabilities**



Source: our elaboration on Prowess data.

**Graph 13 - Mahindra & Mahindra, Bharat Forge - ROE (%); yield of the securities issued by the Indian central government**



Source: our elaboration on Prowess data.

### 3.4 Competitive advantages: Management skills and differentiation

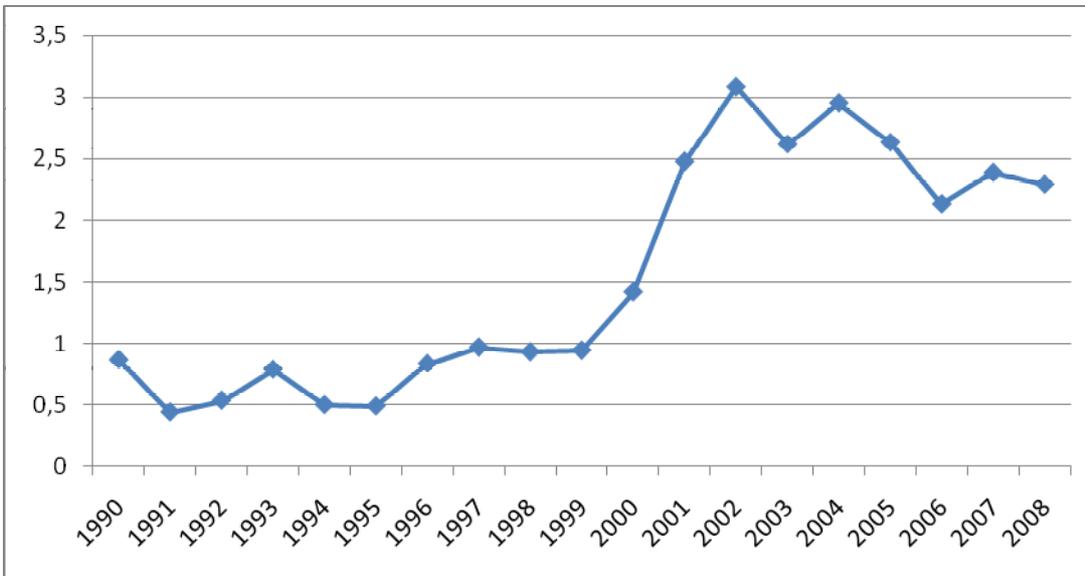
- In the case of M&M it can be highlighted that Mr. Anand Mahindra, the vice-chairman and managing director of M&M, third generation scion of the family running the company, is today 52 and took over as head of the company in 1991 (interview; Stewart and Raman, 2008). He is a Harvard graduate and received several awards recognizing his managerial achievements<sup>50</sup>. Moreover, an “increasing number of managers” have foreign education or professional experiences matured abroad in their background, while the company top management average age is lower than 50 (interview). Lastly, the human resource management techniques employed are oriented to talent scouting (both domestically and abroad) and retention<sup>51</sup>.
- With reference to BF it can be observed that Mr. Baba Kalyiani, the company’s promoter, chairman and managing director, whose family holds 51 per cent of the company’s stake, graduated as mechanical engineer at Boston's MIT and had extensive foreign exposure, as underlined by BF management on the occasion of our interview.

<sup>50</sup> Mr. Mahindra received the following awards: Person of the Year 2005, awarded by Auto Monitor; CNBC Asia Business Leader Award for the year 2006; The Most Inspiring Corporate Leader of the Year 2007 by NDTV Profit; and Business Man of the Year 2007 from Business India (company annual reports).

<sup>51</sup> A dedicated structure was set up, the “International talent council”, that is devoted to this activity as well as to favour the cross fertilization process across countries.

- Advertising plus marketing expenses over sales ratio for Mahindra & Mahindra is reported by graph 14.

**Graph 14 - Mahindra & Mahindra - Advertising+marketing expenses/sales (%)**

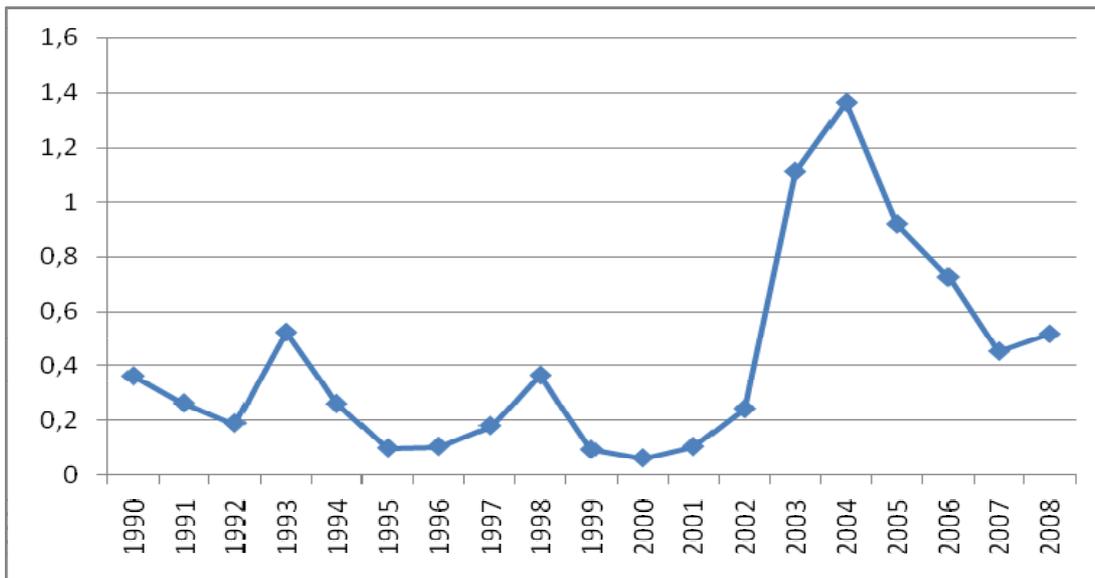


Source: our elaboration on Prowess data.

As we can see, the expenses in question remain a low percentage with respect to sales, nevertheless they have been doubtlessly increasing since the end of the 1990s. On the occasion of our interview we were also told that both tractors and passenger vehicles – although through different channels – are “strongly advertised” by the company. Besides, it is worth noting that the company is devoting much effort in “establishing the Mahindra brand across the globe” (Mahindra & Mahindra 2007), which is also the reason why in occasion of the strategic alliances it weaved it has aimed at retaining the Mahindra name for products whenever it was deemed sufficiently strong (company interview).

Also in the case of Bharat Forge the company’s expenses for advertising and marketing remain still low (see graph 15), but showed a strong increase in the 2000s, and in particular between 2002 and 2004, with respect to the previous decade.

**Graph 15 Bharat Forge - Advertising+marketing expenses/sales (%)**



Source: our elaboration on Prowess data.

- Lastly, we can observe that M&M's offer of three wheelers, passenger vehicles and LCV is far from being undifferentiated: we count at least eighteen models of such products: two three wheelers, five pick ups, two SUV, the Logan car and eight LCV<sup>52</sup> (company web site), for many of which different versions are also provided. Adaptation of the vehicles originally developed for India is also undertaken (in India) when they are exported on foreign markets (company interview).

### 3.5. Alliances and leverage: the external network

- In the course of time M&M could leverage external resources thanks to the foreign partners it came into contact with through both equity and non equity agreements (see table 5). Some of such contracts were more focused on technology, as in the case of the licenses concerning engines obtained in 1979 from Peugeot and in 2001 from Renault, or in that of the JV established in India in 1983 with Menzolit – an important European composite manufacturer –, where the German partner supplied the latest technology in the relevant field. But other resources were also accessed thanks to these relationships. So the aforementioned agreement with Peugeot itself was also intended to help the penetration of the European market (Lall, 1983b). Another JV - Mahindra International, established with a subsidiary of Navistar (US), leader in the North American markets of medium and heavy trucks and buses - should allow the Indian company to make its very entry – probably starting from 2009 – in the segment of

<sup>52</sup> These products are manufactured either directly by M&M or by the aforementioned JVs Mahindra International and Mahindra Renault.

M&HCV, as well as to engage in the engineering service and contract sourcing business in this sector. Lastly, the JV Mahindra Renault, besides access to international-level technology, offers M&M the opportunity to enter the (at least potentially) mass market of the low-cost segment passenger cars<sup>53</sup>.

- Concerning the possible advantage represented by BF's capacity to leverage external resources, since the 1960s this company entered a few agreements with foreign companies that allowed it to upgrade its technological level (see further table 6). Besides, we can observe that before starting its internationalization process through FDI the company was already established as supplier of a number of global customers. So in 2003, the year in which the company undertook its first FDI, it already had 24 global customers, including vehicle manufacturers as well as tier one component suppliers (Bharat Forge, 2003). Only one year before, BF had announced that it had succeeded in enlarging its customer base from 10 to 21 OEM/tier one suppliers, which already included names such as Daimler Chrysler and Renault Vehicle Industries (Bharat Forge, 2002). In 2007, also thanks to the customers gained through the acquired companies, the above mentioned number increased to 35 and among them for instance Toyota, BMW, General Motors, Volkswagen, Renault, Volvo, Iveco, Scania, Cummings and Dana Corporation could be mentioned.

**Table 5 - Mahindra & Mahindra's external network**

	<b>Partner and object of the agreement</b>	<b>Nationality of the partner</b>	<b>Year</b>
<b>Non-equity Agreements</b>			
<b>With foreign companies</b>			
	Technical and Financial Collaboration with Willys Overland Corporation to assemble Jeep-type vehicles	US	1954
	Collaboration with Rubery Owen for manufacturing LCV	UK	1965
	License agreement with Peugeot concerning diesel engines (also intended to help the penetration of the European market)	France	1979

<sup>53</sup> The JV agreement provides that Renault would contribute engineering and quality system and M&M its knowledge of the local market, as well as access to its distribution network and financial resources. On his side Renault gets access to trained low-cost manpower and to the high-potential Indian car market. It is interesting to note that a second JV was agreed in 2007 by M&M and Renault, joined by Nissan. It should have manufactured passenger vehicles for the three partners, as well as transmission systems for Nissan and Renault in a new plant near Chennai. Again, through this initiative M&M would have gained access to technological and industrial expertise of the foreign partners and their connection to the international market. Nevertheless in January 2008 M&M announced its exit from the project (company web site).

	Technical collaboration with Mitsubishi / Samcor to manufacture the minivan Mitsubishi L300	Japan	1996
	Agreement with Renault regarding petrol engines trucks	France	2001
	Agreements with local companies to assembly CKD vehicles and tractors	Iran, African countries, Serbia, South America	n.a.
	Agreements with local companies to assembly CKD sport utility vehicles (Scorpio)	Egypt and Brazil	2008
<b>Equity agreements</b>			
	JV (Mahindra Sintered Products) established with a company of the GKN Group in the auto parts business (exited in 2002)	UK	1960
	JV (Mahindra Ugine Steel Company) established with Ugine Kuhlmann in the steel - auto part business	France	1962
	JV (International Tractor Company of India) established with International Harvester Company, to manufacture tractors (in 1977 merged with M&M, giving birth to the tractor division of M&M)	US	1963
	JV (Mahindra Composites, now part of Systech), established with Menzolit GmbH, the largest manufacturer of composites in Europe; the foreign partner supplied the latest technology of mechanised products	Germany	1983
	JV (Mahindra Steel Service Centre) established with Mitsubishi Corporation and Nissho Iwai Corporation to supply blanks on just in time basis	Japan	1993
	JV with Ford Motor Company to manufacture passenger cars (M&M exited in 2005)	US	1996
	51% JV (Mahindra International) with International Truck and Engine Corporation, subsidiary of Navistar International, to manufacture trucks and buses for the Indian market and for exports, and diesel engines for medium and heavy commercial trucks. The JV would also operate as sourcing company for components and materials and as engineering service provider for the design and development of trucks and buses. M&M transferred its LCV business to the JV	US	2005
	51% JV with Renault for manufacturing in India the low cost sedan Logan	France	2005
	51% JV (Mahindra Navistar Engines) with a subsidiary of Navistar International, to manufacture diesel engines for medium and heavy commercial trucks	US	2007
	JV agreed with Renault and Nissan to manufacture passenger vehicles for the three partners, as well as transmission systems for Nissan and Renault (in January 2008 M&M announced its exit from the project)	France/Japan	2007

**Table 6 - Bharat Forge's external network**

	<b>Partner and object of the agreement</b>	<b>Nationality of the partner</b>	<b>Year</b>
<b>Non equity agreements</b>			
<b>With incumbents</b>	Technical agreement with SIFCO for hammer forging technology	US	1962
	Technical agreement with Tokyo Drop Forge for technology up-gradation and quality improvement for hammer forging	Japan	1984

	Technical agreement with Jidosha Buhin Kogyo for machining of front axle beams	Japan	1986
	Technical Know-how and assistance from MetalArt Corporation (Japan) for small forgings	Japan	1996
<b>With institutions</b>	Collaboration with universities for internship and use of test facilities	India, UK, Germany, Sweden	n.a.
	Programmes of talent scouting and staff training, developed in collaboration with foreign (as well as with Indian) universities	India, UK, Germany and Sweden	n.a.
<b>Contracts with global customers</b>			
	Nr. of global customers* increased from 10 to 21		2002
	Global customers* numbered 35		2007

\*Global customers include both component suppliers and vehicle manufacturers.

### 3.6 Internationalization process: exports

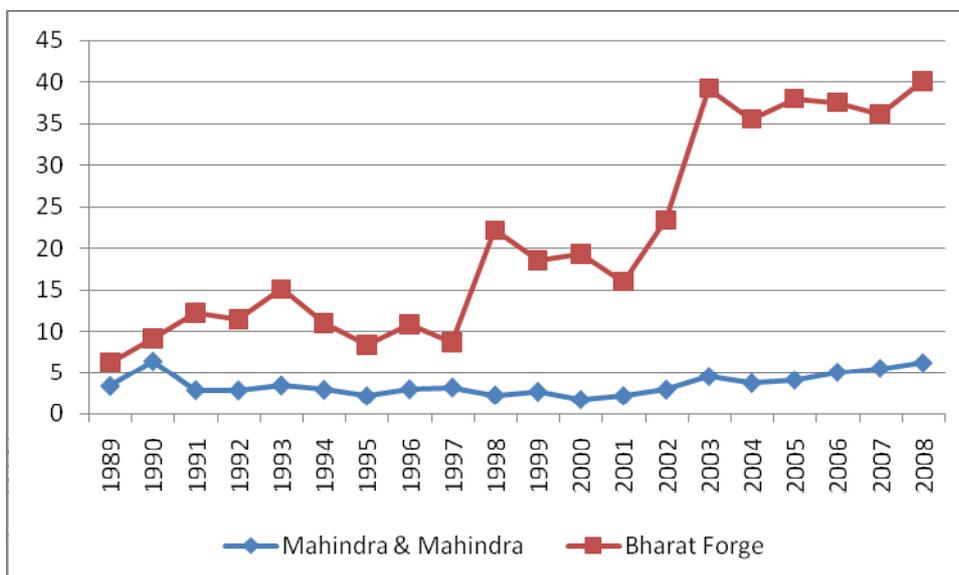
- M&M started exporting in 1968 with a shipment of utility vehicles and spare parts towards Yugoslavia. Exports towards Asian countries (Philippines, Ceylon, Singapore, Indonesia) began one year later and progressively extended to Africa, Latin America and Europe (company web site). To measure the level of internationalization of M&M automotive business looking at the export/sales ratio is not easy at all. Indeed, as already mentioned, M&M operates in the three wheels, commercial and passenger vehicle segments, while other companies of the group (gathered in the Systech business unit) are active in the automotive component business. So, on the one hand, looking at M&M's export/sales ratio, the only one available to us, tells us only a part of the story, and one that includes also tractors and other farm equipments. On the other hand, looking at the whole group's sales to customers located outside India – which amounted to 29 per cent in 2008 (Mahindra & Mahindra, 2008) – we obtain a picture that refers to all the businesses of the conglomerate, some of which are highly internationalized<sup>54</sup>. Keeping in mind this caveat, we can still see that during the current decade the internationalization process in M&M has advanced, as shown by the increase of the indicator in question from 1.7 in 2000 to 6.2 per cent in 2008, as illustrated by graph 16. Geographical orientation of export is different for tractors and passenger vehicles. In the former case U.S is the main market. Other export countries are China, African countries, Nepal, Bangladesh, Sri Lanka, Eastern Europe, Australia, with forays in New Zeland, Brazil and Chile. SUV and pick up are exported towards different geographic areas, whose importance is by and large equal: Africa (South Africa, Marocco, Sudan), Europe (Italy, France and Spain), South and Central

<sup>54</sup> So for instance over 90% of Mahindra group's IT business is generated outside India (company interview).

America, Australia, and SAARC countries, that used to be the most important market until early 2000s. Logan export towards Nepal started in 2008 (Mahindra & Mahindra, 2008; interview). M&M is working at its entry on the US pick up and SUV market. A distribution agreement was signed as back as 2006 with Global Vehicles USA and the vehicles are being adapted to make them compliant with the US regulation and with the requirements of the local market (interview), so that recently the launch has been put off until the end of 2009 (*Automotive News*, 1 September 2008).

- As regards BF internationalization process, in 1972 the company executed its first export order towards Greece, followed by some others towards USSR (company web site) However, it is only in the 1990s that the export business really takes off. As shown by graph 16 export/sales ratio grew considerably as back as the late 1990s, well before the company started its internationalization through FDI, and even further in the following decade. In particular since the second half of the decade it also became a means for the company to overcome the difficulties generated by the slowdown of the internal market. The increase in BF export was especially due to its breakthrough in developed countries markets such as the US, UK and Japan as regards engine and suspension components. Currently the US are the first export market for the company (absorbing about 65 per cent of its total exports in 2007), that sells there (including exports and local production) mostly commercial vehicle chassis and engine components (73 per cent) but also car engine components (13 per cent) and non auto forgings (14 per cent) (Bharat Forge, 2007). Russia, China and Europe are also important destination countries, besides those mentioned above.

**Graph 16 - Mahindra & Mahindra\*, Bharat Forge - exports/sales ratio (%)**



Source: our elaboration on Prowess data.

\* Data regarding M&M refer only to Mahindra and Mahindra Ltd (therefore do not include exports of auto components).

### 3.7. Internationalization through FDI: can we talk about an “ internal network”?

- As regards the company internationalization via FDI, in 2008 the foreign production/total production ratio amounted to about 16 per cent for the whole Mahindra group, which, for the same reason mentioned above, is not very indicative of the internationalization level of Mahindra’s automotive activities. As regards the latter, anyway, it is the auto part segment which most contributes to the foreign production of the sector (interview). The steps of M&M’s multinationalization process are shown by table 7.

**Table 7 - Sequence of foreign investment undertaken by Mahindra & Mahindra**

Operation carried out in	Mode of entry / target company name (in case of acquisition)	Country	Value of investment	Activity
1969	JV (closed in consequence of the political events in the host country)	Iran	n.a.	Manufacturing of auto parts
1984	JV (closed at mid 1990s)	Greece	n.a.	Assembly unit for utility vehicles
1994	Establishment of Mahindra USA.	US	n.a.	Initially distribution, then assembly of tractors
2004	80% JV with Jangling Motor	China	8 mln \$	Manufacturing of tractors for the local market and some exports; some R&D; in the future products should be developed and manufactured also for the Indian market
2004	51% JV with Africa Automotive Investment Corporation ( M&M South Africa)	South Africa	n.a.	Import and distribution of SUVs in South Africa and neighbouring countries
2005	Establishment of M&M Australia	Australia	n.a.	Assembly of tractors and import of tractors from India
2005	Establishment of Mahindra & Mahindra Europe (80% JV with an Italian company)	Italy	n.a.	Import and distribution of SUVs in Italy, France and Spain
2006	Acquisition of 99% of the Stokes Group (through Systech)	UK	undisclosed	Production of autocomponents
2006	Acquisition of 68% of Jeco Holdings (through Systech)	Germany	undisclosed	Production of autocomponents
2006	Acquisition of Schoneweiss (through Systech)	Germany	Undisclosed (estimated: 117-156 mln \$)	Production of autocomponents
2008	Acquisition of G.R.D Grafica Ricerca Design	Italy	undisclosed	Auto designing, body engineering and feasibility, styling; two wheels design
2008	Acquisition of 100% of Metalcastello spa (through Systech)	Italy	undisclosed	Manufacturing of gears and shafts for tractors and construction equipment

2008	Acquisition of 100% of Engines Engineering srl (through Systech)	Italy	undisclosed	Engineering services for the two wheels business
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After a couple of operations undertaken abroad in the late Sixties and in the mid Eighties, both closed down in about ten years, the very multinationalization of the company started in the first half of the 2000s. In the tractor sector M&M multinazionalization occurred through the setting up of assembly and manufacturing units both in developed countries and in China, preceded – in the case of the US and Australia – by operations simply dealing with distributive activities. In the passenger vehicle sector the company’s multinational expansion mainly regarded the distribution and assembly activity. Recently M&M undertook asset seeking foreign operations, such as the acquisition of one Italian company operating in the passenger vehicle design. The target company has also been operating for a few years now in the two wheels design, a business in which M&M intends to diversify, as testified by another recent acquisition it carried out in Italy, targeting Engines Engineering srl. Lastly, to measure the company ambitions in this business, it is worth noting that M&M was also among the bidder for the acquisition of Land Rover and Jaguar from Ford in 2007 , but Tata Motor’s offer was preferred to Mahindra’s. It is however in the auto part segment that Mahindra has been pursuing its multinationalization in the most intensive way, as can be noticed in table 7. In 2004 the group decided to strongly develop its automotive components business believing in its high growth potential in the context of the development of the Indian automotive industry (company web site). So the business unit Mahindra Systems and Automotive Technologies (later re-named Systech) was established, which gathered several companies of the group as well as different activities previously performed inside different Mahindra companies. The growth of the automotive components and engineering business was obtained by Mahindra in large part through a sequence of acquisitions, first in India - where a plan equipped with a state-of-the-art German press forging and having among its customers the US company John Deere, was bought from Amforge Industries in 2005 - and then abroad, where M&M’s targets were high ranking companies based in the developed countries, having among their customers firms such as Land Rover, DaimlerChrysler, Volvo, Renault, MAN, Scania, Bosch, Visteon, Ford and Jaguar.

- As regards the presence of an internal multinational network involving M&M’s parent company and its foreign subsidiaries, programs and initiatives have been developed aiming at fostering the value sharing and the best practice transfer across the company units. The company values have been recently formally articulated after a consultation program that involved the different

levels of personnel in India and abroad, in order to take into account “what the common values are in the company” (interview). Besides, the extensive training programs provided by M&M, both in India and abroad, represent an opportunity for the personnel of the units located in different countries to meet, and therefore contribute to strengthen the company common values. Another opportunity is offered by the executive-development program that M&M organizes yearly at Harvard University. Videoconferences and other ICT devices are also extensively used, thanks also to the synergies the company enjoys due to the presence of an information technology business unit in the Mahindra group (Stewart and Raman, 2008). Drawing upon the presence of the above mentioned elements, one could suppose an “horizontal” pattern of relationship between parent company and subsidiaries, in which the contribution offered by the latter is valued, and where knowledge flows exist also from the “periphery” to the centre. Other signs, however, indicate that a strong coordination is operated from the parent company. So each foreign unit pertains to a strategic business unit (SBU) inside the Mahindra group and reports to it; SBUs in turn have some objectives to pursue that are set by the centre and are coordinated at central level through monthly meetings with the group’s chairman, where a monitoring of their performances is also carried out. A set of procedures is also set by the centre and has to be applied across the whole company structure (company interview).

- BF’s multinationalization path is outlined by table 8. As it can be noticed, since 2003 the company has developed a productive presence abroad: in the US, Germany, Sweden, Scotland, UK and China. So in 2008 it counted twelve productive locations in those countries and 73 per cent of its consolidate revenues came from outside India. This result was achieved through successive acquisitions of developed country based companies often near bankruptcy, which made the operation easier to carry out from a financial point of view and better accepted by target company workers and local environment (Le Monde, 4 December 2007; Goldstein, 2007).

**Table 8 – Sequence of foreign investment undertaken by Bharat Forge**

Operation carried out in	Mode of entry / target company name (in case of acquisition)	Country	Value of investment	Activity
2003	Acquisition of Carl Dan Peddinghaus	Germany	Undisclosed	Manufacturing (engines, chassis and railroad components); R&D
2004	Acquisition of Aluminiumtechnik GmbH & Co KG	Germany	6.3 mln euro	Manufacturing (forged chassis parts); R&D
2005	Acquisition of Federal Forge	USA	9.1 mln \$	Forgings for cars and trucks

2005	Acquisition of Kilsta AB and its wholly owned subsidiary Scottish Stampings	Sweden + Scotland	Undisclosed	Manufacturing (crankshafts, front axle beams, steering arms, transmission parts for automotive Industry); R&D
2005	52% Jv with FAW Group	China	Undisclosed	Manufacturing (Parts for Engine, Chassis, Front Axle Beam, Transmission, Gear box, Driveline Catering for commercial vehicles and cars; components for the railway sector and the construction industry machines)

- As for the internal network characterizing BF, we found out that the company has implemented specific programmes to benchmark the different units' best practices and to transfer them.<sup>55</sup> So, extensive exchange programs have been developed involving the company engineers, who are sent for some periods to work at the unit where the best practice concerning their specific job is in place (interview). In addition, to back the sharing of common values across its operations, BF has undertaken a system of "integration meetings" that are held three times a year, involving the personnel of the different levels. The meetings are organized outside the firm premises and address subjects that also go beyond the questions strictly connected with BF. Nevertheless, elements of strong coordination are also present in the relationship between parent company and subsidiary, as it is necessary to run the dual shore designing and manufacturing system adopted by BF<sup>56</sup>. The original and flexible organization of BF internal network represents a source of managerial efficiency for the group.

### 3.8 What conclusions from these two case studies?

- Despite the still modest level of expenses in formal R&D, the important achievements of M&M – such as its Indian market leadership on the utility vehicle and tractor segments, its penetration on the tractor market in several foreign countries, among which also Australia and the US, the numerous awards received and the certifications it obtained – signal the presence of a quite respectable level of innovation. The technological advantage pointed out for M&M by Sanjaya Lall as back as the early 1980s seems to be confirmed. This scholar saw it mainly consisting in the "fresh injection of foreign technology" – for instance, at that time, from Peugeot – and in its product adaptation capability (Lall, 1983b: 59). Such capability has currently increased up to the point to allow the company to manufacture the first Indian indigenously developed SUV –

<sup>55</sup> At Bharat Forge's in the case of R&D activities the monitoring of the best practices and the actions aimed at their transfer across the different units are coordinated by the company's Centre for excellence in R&D, located in Germany.

<sup>56</sup> The company can design and manufacture each of its products in at least two locations, and therefore it is able to fill each order either from a low cost location such as India or China, at a lower cost but with a longer delivery time, or from an overseas unit operating near to the final customer, which involves a higher cost but, among other advantages, a very short delivery time. This system implies a coordinated management of the different company units across countries.

Scorpio – in 2002, and to unveil Asia’s first bio-diesel SUV and India’s first bio-diesel tractor in early 2007.

Also Bharat Forge’s production shows a not negligible technological level , attested by the certification it possessed as back as the early 1990s and by the fact that it serves, and had already been serving even before starting its multinationalization process, many global vehicle makers and tier 1 suppliers. This result was attained by BF thanks also to the skilled manpower it has employed, and to the attention it has devoted to the quality issue, both in production – with the application of total quality management practices – and as regards the management, to improve the quality of which specific programs have been implemented.

- Being part of a conglomerate is the source of strong competitive advantages for M&M. Its vehicle and tractor units benefit from numerous synergies arising from the activities of other firms of the group: for instance they can resort to “internal” design, sourcing, logistic and aftermarket services, and can offer their customers an “internal” retail finance service. Besides, the conglomerate advantage also consists in the possibility to transfer technology and cash flow among branches (Richet and Ruet, 2006). Also as regards Bharat Forge, being part of an industrial group represents a competitive advantage, that in this case consists – at least – in the access to raw material (steel, in particular) at favourable conditions, thanks to the presence of companies operating in this business inside the Kalyani group.
- As regards the motivations of M&M’s international strategy, in the tractors and passenger vehicle sectors it seems to be fundamentally of a market/export oriented sort and to be characterized by a resource seeking (in the manufacturing plant in China) and asset exploiting (in the assembly units in US, as well as in the subsidiaries engaged in distribution in Europe and South Africa) nature. In this context, however, the acquisition of the Italian design companies GRD and Engines Engineering presents different characteristics. In this case the asset seeking motivation, as regards in particular technology and skilled labour, is indeed prevalent, joined with that of generating scale and scope economies. Lastly, M&M internationalization process in the auto component sector is marked by a strong asset seeking motivation, as regards not only technology but even the productive structure itself.

In our opinion BF’s multinationalization process presents different motivations. On the one hand it is aimed at allowing the company to keep growing beyond the Indian market, which could not further be done through exports, as several customers require a productive presence near their plants in foreign countries. We can therefore observe an evolution from exports towards foreign production. On the other hand Bharat has aimed at accessing resources that could improve several aspects of its business: R&D in the first place. Other aims of the process

were to de-risk the business by diversifying the company's product portfolio and by entering different geographical markets that have separate business cycles. Last but not least, the international expansion would allow the company to increase its economies of scope, putting it in the position of supplying not only the single component but more complex subsystems (Ramachandran et al. 2004). Though including the asset seeking motive, the company's motivation in getting multinational seems however to be fairly varied.

- Bharat Forges's multinationalisation can be defined, in our opinion, "accelerated", as it counts four acquisitions and one JV since 2004, that brought the company to have a productive presence in five countries over three continents. Similar considerations can be done with respect to M&M, in particular as regards its auto part business.
- Alliances played an important role in our focus companies' technological upgrading. In the case of M&M, in particular, the JV means was extensively used in that context, and represented a valid learning instrument for the Indian company (Balcer, 1990).
- Taking into consideration the question concerning the development of an internal network, our case study MNCs do not reflect the "traditional" organizational model consisting in a parent company generating innovation and possessing several kinds of competitive advantages, exploited abroad. Indeed, there are several instances in which both focus companies' foreign operations, carried out through acquisitions, also represent a way to access knowledge resources. This is the case of Carl Dan Peddinghaus's acquisition by Bharat Forge, and of the design companies' acquisitions by Mahindra. Likewise the relationships between parent company and subsidiaries does not correspond to the very loose one described by the 1970s' literature about Third World multinationals (Wells, 1977; Wells, 1983). In this regard it can be stressed that from a certain point of view the parent-subsidiary relationship seems to follow a horizontal pattern. For instance, all units are offered the possibility of contributing to the generation of the company's common values and of the corporate image, and their personnel can take part in common training and motivation meetings organized for all the personnel, which helps the "learning to learn" process in the framework of the company (Bartlett and Ghoshal, 2000). Besides, technology transfer among the different units is carried out through extensive personnel exchange programmes. Nevertheless a number of elements of strict coordination by the centre are also present, in which – therefore – a hierarchical dimension of the centre-periphery relationship has to be remarked. This is true for instance with reference to the strict monitoring/assessment system of the foreign units in place in M&M, or with Bharat Forge's dual shore designing and manufacturing system.

- Finally, these cases show – at a different extent – the interaction between the external network of agreements and the internal network of foreign affiliates, consistently with the sequences  
alliances  $\Rightarrow$  leverage  $\Rightarrow$  learning  
and  
acquisitions  $\Rightarrow$  leverage  $\Rightarrow$  learning  
that we have pointed out in Section 1.6.

#### **4. Conclusions: from learning and acquisition of capabilities to multinational growth**

This chapter presents the first results of a research work on Indian multinationals. It sheds light on the emergence of Indian multinationals in the pharmaceutical and in the automotive sectors and on the role of technology transfer and acquisitions, as well as of productive and technological alliances, in creating the conditions for the multinational growth of Indian firms.

We can point out our main findings as follows.

1. Our selected case studies in these two key sectors seem to show that company trajectories broadly follow two stages.
  - a) In a first stage, the acquisition and assimilation of technological knowledge, the accumulation of human capital and managerial skills, and the improvement of production efficiency and marketing capabilities take place within the Indian market, thanks to the creation of an external network of joint ventures and alliances with incumbent Western and Japanese MNCs in the domestic market, as well as with local research institution. The acquisition of multinational affiliates in India may represent a complementary strategy (or basically an alternative one, as in the case of Sun Pharmaceutical Industries), in order to reach the same result. As a consequence, new competitive advantages arise from economies of scale and scope, managerial efficiency, financial strength and from the ability to assimilate the imported technology, adapting and recombining it in a creative way.
  - b) In a second stage, the multinational expansion takes place, thanks to the capabilities and abilities accumulated during the domestic market-driven phase. The international growth is both market-oriented, to gain the access to new markets, and also (to a relevant extent) motivated by asset-seeking and asset-augmenting strategies. As a consequence, the firm-specific advantages created during the first stage are significantly developed contextually with the internationalisation process, while new assets are acquired and new competences are created. In this second stage, both the external network of alliances and linkages and the internal multinational network, under the corporate control, extend geographically and affect new activities.

During both the first and the second stage, the external network of international alliances and joint ventures had a crucial role in the process of leveraging resources and building competitive advantages, along with the expansion of the internal multinational networks, via acquisitions abroad.

2. From the point of view of the theories concerning the EM multinationals, our empirical evidence suggests that the international operations of Indian firms are not only asset-seeking, nor motivated by the simple lack of competitive advantages, as suggested by some authors. On the contrary, significant firm-specific advantages (or ownership advantage, in terms of John Dunning's paradigm) pre-existed to the multinational expansion. Therefore, the claim that the internationalization pursued by emerging country firms represents a process fundamentally aimed at the acquisition of resources otherwise inaccessible needs to be integrated in a wider view of the process under way.

3. In the Indian case, some traditional ownership advantages were indeed lacking when the multinational expansion started: it is the case of patented proprietary knowledge and technology. However, other advantages supported the international growth. In particular, we can argue that the following factors represented significant competitive advantages supporting the second stage of growth of the Indian firms considered, i.e. their multinational expansion.

- Economies of scale and scope. It was the case for automakers in the commercial vehicle, pick-up and low-cost vehicle segments, as for the auto component sector, whose growth was driven by the booming domestic demand, and by the entry of multinational assemblers. To become suppliers or partners with global car manufacturers offered the Indian companies the possibility to grow and diversify production.
- Synergies derived from the diversified or conglomerate nature of family-controlled business groups, as in the case of Mahindra and Mahindra and Bharat Forge among our focus companies. Intra-group technology transfer, along with information flows, access to raw materials at favourable conditions and availability of abundant financial resources were considered as crucial factors supporting international growth by corporate managers.
- The capacity for fast assimilation and creative recombination of transferred technologies and know-how, supported by the managerial and engineering abilities developed during the first stage. It is the case of both the automotive and the pharmaceutical industries.

- Acquisition of well-established brands during the first stage of domestic market-driven growth, through the acquisition of foreign affiliates in India. It is the case of Nicholas Piramal, also supported by strong marketing skills.

4. The empirical evidence suggests that a crucial set of firm-specific competitive advantages for the Indian emerging multinationals derives from country-specific Indian advantages:

- The huge dimension and fast growth rate of the domestic market. The innovation processes themselves are in most cases market-driven, as in the case of the low-cost sedan project Logan, launched by Mahindra and Renault. This new dimension of technological innovation processes may in some way recall the ‘appropriate technology’ debate in the 1970s.
- Domestic savings and the expanding national financial system strongly supported the corporate growth and the international expansion, until the 2007 global crisis.
- Policies matter. The liberalisation of trade policies played a major role, pushing Indian groups to expand abroad. However, also the impact of the import-substitution industrial policies should not be underestimated as a key element in building some of the pre-conditions for industrial growth.
- The Indian national system of innovation and the educational system represented essential conditions for the acquisition of industrial technology and of the organisational capabilities that allowed the industrial groups to go abroad. Indeed, low cost and highly skilled labour, including engineers, chemists, managers and technologists, represent a crucial country-specific advantage, giving rise to firm-specific advantages for all the companies considered. This factor explains why the Indian ability to absorb foreign-generated technology evolved into the capacity to introduce original improvements, incremental innovations and finally new products and processes.

5. Some of the Indian emerging multinationals are market leaders worldwide in specific product segments and niches. It is the case of Bharat Forge in the manufacturing of some chassis components and that of Mahindra and Mahindra in tractors. The internationalisation process is then based on such leadership, allowing a two-fold diversification process, both in new markets and in new industries.

6. Asia is not a dominant destination for our focus companies’ multinational operations, that are also largely oriented to both Europe and the US, as can be seen by looking at the list of their international operations. As far as generalizations can be drawn upon case studies like ours, this seems to suggest that the multinationalization of Indian corporations tends to develop from the continental size of their domestic market directly to a global dimension.

Lastly, we can remark that the different trajectories we have observed in our case studies confirm how important the issue of hybridisation is, in order to explain the growth patterns of the new multinationals from India, a circumstance that can possibly apply to emerging country MNCs in general. While some common features are emerging, there is no one best way to go multinational, and international strategies reflect different paths and competitive assets.

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