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STRATEGIC ALLIANCES AND NEW PRODUCT DEVELOPMENT: THE CASES OF ROVER AND SEAT

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Abstract

The large influence of the automotive industry in the global economy is widely recognised. This sector has undergone enormous changes in order to be ready for the fierce competence of the next to come 21st century. Among theses transformations, the most relevant are those technologies developed for the rapid evolution of the activities linked to new designs, new products, and new manufacturing processes and systems, which aim to cope with the always innovative Japanese car makers.

International technology alliances may be one option to gain access to the brand new competitive technologies. At the same time, the risks and costs associated with new product development are shared among the allies, as well as the manufacturing facilities and production capabilities. Sometimes, the agreement may even give place to the deployment of new capabilities. In spite of its many potentialities, the literature presents the success rate of alliances being below a 50 percent.

Our study considers two examples of companies that developed international joint ventures (IJVs), Rover with Honda, and Seat with Volkswagen, respectively. Since these two European peripheral companies, Rover and Seat, no longer remain as independent firms, we are interested on identifying the reasons leading to the success or failure of these IJVs as regards the New Product Development (NPD) process. In spite of the fact that most of the literature characterises the strategic technology alliances as highly successful, new empirical evidences are questioning that consensus. In particular, some recent cases are bringing into the limelight the dangers associated to enter an IJV when one of the partners is weaker than the other and it does not have a well defined strategy. The weakest firm can become completely reliant on its associate, thus aggravating and accentuating its constraints. Our article addresses the question of possible dependencies along the NPD process in the Rover and Seat cases and looks for an answer to the question of how such type of *addiction* affects the survival of the firms.

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1. The state of the art

After the merger and acquisition boom of the eighties, the decade of the nineties have assisted to the growth of strategic alliances and international joint ventures (IJVs) as a means of achieving a range of corporate objectives. As an important explanatory factor for the alliance trend, it has been argued that alliances and IJVs provide a platform for organisational learning, giving access to the skills and capabilities of their partners (Inkpen and Crossan, 1995; Hamel, 1991; Kogut, 1988; Ritcher and Vettel, 1995; Westney, 1988). Competition is becoming more and more knowledge-based as firms strive to learn and to develop capabilities faster than their rivals (Teece and Pisano, 1994), leading to an increasing number of alliances with learning from partners as a primary goal (Hamel, 1991; Huber, 1991). Inkpen (1998, 224) estimates that the number of strategic alliances formed grown upper than 25% since 1990.

In this context, we define the concept of strategic alliance as a *"long-term co-operative arrangement between two or more independent firms that engage in business activities for mutual economic gain"* (Tsang, 1998, 209). Sϕresen and Reve (1998, 151) argue that *"strategic alliances can be conceptualised as modes of organisation that can be used by companies to prepare themselves for competitive positioning. Thus, purposeful arrangements among distinct but related business organisations that allow the partners to gain sustained competitive advantage vis-a-vis their competitors outside the alliance (Jarillo, 1988)"*. We will define a Joint Venture (JV) as a means of performing activities in combination with one or more firms instead of autonomously (Inkpen and Crossan, 1995, 595).

Grant and Baden-Fuller (1995) affirm that through "learning alliances" firms can speed capability development and minimise their exposure to technological uncertainties by acquiring and exploiting knowledge developed by others. Nonaka (1991), has stated that in times of rapidly changing market conditions and increasingly shorter product life cycles, companies are only able to sustain their successful position with a continuous generation of new knowledge, its fast spreading within the whole organisation and its conversion into new technologies. Then, it is very likely that some joint ventures are formed to explore interfirm differences in skills. So far, if we admit the above premises, we are assuming that, under a given set of conditions, companies that require to permanently renew it knowledge basis should embark into strategic technology alliances to remain competitive. Recent work on alliances and the role of firms specificity knowledge in firm strategy (Mowery et al., 1996, 78) suggest additional motives and effects of alliance formation. Rather than using alliances to acquire capabilities, scholars suggest that firms use interfirm collaboration to gain

access to other firms' capabilities, supporting more focused, intensive exploitation of existing capabilities within each firm (Grant and Baden-Fuller, 1995; Nakamura et al., 1996). The category of strategic technology partnering that we are considering here is the one suggested by Hagedoorn and Narula (1996), that involves contractual alliances covering a relatively large group of partnerships without equity sharing, such as joint development agreements, joint research parts, cross licensing, second-sourcing agreements, mutual second sourcing, and R&D contracts.

There are several very well known research lines in the field of strategic alliances, as Figure 1 depicts.

INSERT FIGURE 1 ABOUT HERE

Although strategic alliances devoted to developing new assets (technology) represent an important target for research (Sϕrensen and Reve, 1998, 151), work on strategic alliances has recently begun to address issues of organisational learning and renewal (Anderson, 1990; Inkpen, 1995; 1998; Inkpen and Beamish, 1997; Inkpen and Crossan, 1995). There is also a growing body of theoretical research and empirical studies (Dogson, 1993; Hamel, 1991; Simonin and Helleloid, 1993) addressing the issue of how organisations exploit JV learning opportunities. The existing literature lacks of a clear linkage between concepts related to organisational learning and learning through JVs; it also lacks of a clear view of the way in which capabilities and strategies are conditioned by the historical development of the parties concerned (Doz, 1991, 96; Geringer and Hebert, 1991).

This paper constitutes an exploratory attempt to explain how strategic technology partnering affect the organisational learning process, allowing the partners to acquire the skills and capabilities that are needed for strategic development (Hamel and Prahalad, 1989; 1990). We consider strategic technology partnering as inter-firm co-operation for which a combined innovative technological activity or an exchange of technology is at least part of an agreement. More particularly, we are concerned with the development of the core capabilities linked to the processes of strategic design and manufacturing of new products. We are also assuming that the partners can co-operate in certain areas, but they still compete with each other in other areas (Hamel, 1992; Pucik, 1988), i. e., what Schill et al. (1994, 262) describe as a horizontal alliance scenery.

Such alliances may imply a high risk of alliance instability, since the alliance knowledge may become not accessible. An array of diverse situations may happen. For instance, one of the partners may have a limited incentive to share its knowledge if such sharing could potentially lead to the creation of a competitor, as suggested by Inkpen (1998, 225). There is also the risk that one partner

may acquire knowledge that it lacked at the time of the alliance formation, and as soon as this knowledge is acquired, such partner may decide to cease the joint venture. It might happen as well that a dependent relationship develops, as the weaker partner does not learn as expected and it can't react on time to the increasing pace of new products and processes innovations. Therefore, when horizontal alliances are considered, it is very likely that they mostly take place for what Schill et al. (1994, 262) have termed "pre-competitive" activities, so that main risks regarding the potential loss of competitive position of the "teacher" partner are kept to a minimum.

Our position is that "teacher" partners do limit the transfer of knowledge to their "student" allies, so that these late ones won't in the long run perform better than their "teachers" will do. The scope and length of the learning process will be constrained by the premise of reducing the variability of the performance of the "student" firms, rather than its increasing. Then, as March (1991) has pointed out, learning makes the performance of the students more reliable, contributing this way to the reliability of the performance of the teachers, as well as to its increasing. Then, whenever the teacher partner is heavily focused on financial performance issues, it won't be concerned with reinforcing learning from its students, unless the students by themselves are able to generate enough resources as to compensate the efforts of their teaching without eroding the (financial) competitiveness of the teacher. We agree with Inkpen (1998, 227) suggestion that in the face of poor alliance (financial) performance, the teacher firm will become reluctant to commit to or even try out proposals generated at the alliance level. Thus, while poor (financial) performance can lead to myopia that acts as a barrier to knowledge creation, the student partner may feel that the alliance doesn't yield satisfactory organisational performance because learning opportunities have been unexploded.

The outstanding problem is that student firms use to lack the financial resources required to source their investments in R & D processes, NPD activities, and so on, being this one of the main reasons to look for a strategic technology alliance with a teacher partner. Then, any student firm with financial problems that is willing to learn from a teacher partner by means of a strategic alliance should take into account that it will only be allowed a limited learning, while some of its assets may be taken as hostage by the teacher ally. When trying to protect its assets, the student is caught in a dilemma, whereby, as stated by Sϕrensen and Reve (1998, 151) "*one hand it need to protect its own specific assets, and on the other it wish to share its assets in the strategic alliance*".

So far, learning through alliances has always a cost, which is a function of dependence and the willingness to remain dependent. Some student firms may decide to become and remain dependent on the teacher firm, in the conviction that they would gain a progressive access to the teacher's knowledge, -in spite of their limited chances to gather some learning through the alliance.

This lead us to the situation described by Nakamura et al. (1996), as one of "divergent development", i. e., partners decline technological overlap, which suggests that some alliances are vehicles for accessing rather than acquiring capabilities. Such sequential and scarce access to knowledge, instead of its acquisition, could be considered by these student firms as an enabler of their future independence from the teacher partner.

This is, however, a misleading conviction, which will prevent the student firm from developing a thorough understanding of its own knowledge, the processes by which it converts knowledge to capabilities, and the capacity of these capabilities to meet the demands of its environments. When the student firms become addicted to the technological development pace of their teacher partners, they lose what Lane and Lubatkin (1998, 474) have defined as *"the required level of self-awareness to quickly react to the market forces that inevitably rode the combined strategic value of their sets of capabilities"*. Consequently, it is very likely that these firms will compromise their chances of developing effective new capabilities on its own and they will probably be unable to identify their future best-qualify teachers.

In this paper we analyse the technological alliances that Rover and Seat signed with Honda and Volkswagen, respectively. Of primary interest in our article is that we are dealing with two horizontal alliances, where two technologically weaker companies looked for gaining access to the skills and knowledge of their corresponding teacher partners as regards New Product Development (NPD). According to the existing literature, Rover and Seat signed the alliances to increase their knowledge and to develop core capabilities that would led to outstanding improvements of their NPDs. It is very likely that both Rover and Seat were using their alliances as a substitute for the knowledge that they weren't able to create. Under such scenery, they could be content to remain dependent on their partners and forget the objective of knowledge acquisition. But then, if the alliances were terminated, as they happened to be, the dependent firms, -Rover and Seat- would probably find that their knowledge base was eroded. We strongly believe that both Rover and Seat placed a high value on alliance knowledge and were seeking to acquire the knowledge. Finding why things didn't evolve as in the NUMMI case, -or like in the more recent one of the Auto Europa, the Joint Venture of Ford and Volkswagen in Setúbal, Portugal, is one of our main tasks along the next sections of this article. We aim at to determine whether or not a technological addiction developed between Rover and Honda, and/or Seat and Volkswagen. In case of such addiction have taken place, we are interested on identifying how it matured and spread across both student firms, as well as its related costs. Accordingly, the paper examines the developments, and under-developments, in the design and manufacturing capabilities at the Rover Group and Seat, as a result of their respective ties with Honda and Volkswagen.

Different researches have claimed that the complexity of strategic alliances and IJVs has been a major obstacle for their studies. Looking for a reasonable solution to such a problem, we have used multiple sources of data as a means of gaining a more complete picture of the *technological addiction* phenomenon. The first source of data was one in depth case study of Seat, developed by Álvarez and González (1997) and conducted between 1993 and 1997. This case was confronted with international literature on the Rover case. We are particularly in debt with Pilkington (1996, 1998), whose research work gave us access to a very well documented knowledge on the British company. He prepared the Rover case using data gathered from public sources, action research and interviews conducted between 1987 and 1994, when the company was finally acquired by BMW and the Honda relationship ended (Pilkington, 1996). These two case studies generated our proposition regarding the direct relationship between *technological addictions* and the absence of technological strength that characterised the two peripheral European carmakers.

A second source of data generated additional support for the importance of the research question. This data source is longitudinal and it is related to a former project initiated by one of the authors (González, 1998). He has studied the complete evolution of Seat from its old days till 1996, analysing the company reports and accounts, and interviewing significant representatives of the former Spanish firm. He has also checked the Seat financial figures against those shown by the other automobile producers operating in Spain along the 1982-1992 period. The third source of data is the study accomplished by Aláez et al. (1996), which deals with the Spanish OEM suppliers operating in the País Vasco and Navarra regions in 1994-1995, a population which represents a 25% of the Spanish sales figure.

Therefore, we have applied the methodology of a deductive case study, based on the cases of Rover and Seat firms and their respective strategic alliances with Honda and Volkswagen in the early eighties. Thus, we are dealing with an empirical inquiry that investigates a contemporary phenomenon in its own context, where the boundaries between phenomenon and context are not very clearly evident, and in which multiple sources are used (Yin, 1989). Our study can be ranked as a qualitative one, which tries to obtain information about how companies develop technological addictions.

The article is organised as follows. We analyse in Section 2 why car firms need to enter Strategic Alliances. Then, we describe in Sections 3 and 4 the Rover and Seat cases, including a parsimonious description of the contents of both alliances, and we provide detailed schedules of the launching of new products. In Section 5 we analyse the results of both alliances and try to isolate the suggested technological dependence. Some managerial implications for firms seeking strategic

alliances, as well as some essential clues for failure avoiding are provided in the sixth section, as well as some suggestions for future research into the complex scenery of these *addictive* relationships.

2. Why should carmakers sign strategic alliances?

Ten years ago, Kobayashi (1988, 29) announced that alliances would be increasingly used along the nineties in order to the development of high-tech automobiles, the reinforcing of the design, and the improvement of the distribution channel. Besides, as the spread of the technological revolution would allow for changes in the comparative cost structure of the different facilities, some automotive manufacturers in advanced countries could no longer afford to produce at home. He concluded that: *"inter - and intra- industry alliances of both a domestic and international dimension had become a strategy which many companies in the automotive industry would like to pursue"* (1988, 30). This argument has also been supported by Burgers et al. (1993).

Savary (1995, 149) has described that all the European and American car manufacturers had to face the same challenges in the 1980s. First, since the demand grew more slowly, competition became more acute. Secondly, products and process innovations led to changes in the competitive priorities, increasing the concern for higher quality and lower costs and prices. Thirdly, the surge of the Japanese firms, with their "lean approaches" to production and operations management. The European automobile production system saw a major change in the eighties, particularly in the United Kingdom and Spain, which have been claimed by Hudson and Schamp (1995, 224) to represent the first tentative steps towards a new system, whose main features are Japanisation, Europeanisation, and relocation of automobile suppliers. One of the first consequences of the Japanese firms entering in Europe has been the increasing competence in the segment of medium-sized models, while Spain and the Southern Italy were gaining market share in the niche of the small-sized vehicles. As a matter of fact, Spain was able in that decade to successfully initiate its fully integration into the European automobile system (Lagendijk, 1994).

The automobile producers operating in Europe followed two strategic responses in the late eighties. The first one was the change in their approach aiming at to increase their R&D and manufacturing activities, in order to acquire quality levels similar to those of their Japanese competitors, as well as reducing the costs. The second strategy was to develop international co-operation agreements as a means of increasing efficiency. The more frequent type of agreement was the one oriented to achieve scale economies between European firms, like Renault and Volvo in 1990. A second usual type of agreement has been the one oriented to the enlargement of the

product range, with new specialised vehicles, and they included both distribution and manufacturing. Most of them pursued to develop new key components such as engines or transmissions and/or new car models. The 1982's agreement between Seat and Volkswagen can be considered a prototype of this approach. It wasn't very frequent to sign agreements with the Japanese as a route to learning about their manufacturing approaches, -like lean production-. The most relevant agreement of this last type was the one between Rover and Honda. A third approach was to go after the growth of internalisation trough direct investments and exports, deployed by all the European automobile producers, in order to increase size, reduce costs and improve competitiveness.

It is also worthwhile to remember that the European market for car components is characterised by a huge number of relatively autonomous firms (Richter and Wakuta, 1993, 265). Supplier-consumer networks within the European car industry rely on a high amount of autonomy. However, if suppliers play an integral role in developing the new car, it should help reduce design changes and improve quality. Furthermore, manufacturing from modular options means that carmakers require smaller facilities, with fewer tools and machinery. Then, as suppliers have become more important, the "assemblers" have started to devote more resources to working with them.

Ford, for instance, began rethinking its supplier relations as far back as 1982, when it discover that using thousands of suppliers created extra costs for record keeping, logistics management, and inventory control. Quality also suffered because each additional supplier increased the variability of the manufacturing process. Following this line of reasoning, Taylor (1994, 53) cautions us that "*more and more carmakers are turning to independent suppliers to provide such critical components as instrument panels, seats and electronics. By assembling these parts off site, then bolting them into the car on the assembly line, the auto companies are behaving more like personal computer makers than traditional, vertically integrated manufacturers*". This implies that car makers have been, and still are, looking for suppliers capable of not just making a part but also designing it, engineering it, integrating it with surrounding parts, and delivering it globally.

On the other hand, Japanese manufacturers try to convince their domestic suppliers to build manufacturing sites in the newly conquered markets because of their long term co-operation and proven reliability. Some Japanese suppliers have already invested in the UK to serve the Honda, Toyota and Nissan factories. It is very likely that by signing a strategic alliance with Rover, Honda was looking for an entrance in the UK components market, to warranty its suppliers the economic feasibility of their investments and innovations.

It is also very probably that both Honda and Volkswagen could have considered they could supply their ventures with Rover and Seat with their products or services, since there is a tendency for companies entering partnerships to see a special opportunity in becoming a supplier to the new venture. As suggested by Shaughnessy (1995, 16*): "It means income without any real marketing or selling, -an easy way to shove money through to the bottom-line and a way of taking risk investment back in the short term".*

Hagedoorn and Narula (1996) have demonstrated that international strategic technology partnering in high-tech industries appears to be disproportionately organised through contractual arrangements, whereas other sectors with lower levels of technological sophistication have a higher share of joint venturing. The automotive industry occupies an intermediate situation between high and medium technological levels; thus, the probability of finding joint ventures and contractual agreements is very high. Due to that peculiarity, Kobayashi (1988) suggested the relationships between the need for continual updating of the car makers capabilities and the strategic alliances as facilitators of this up-to-date. More recently, Hayes et al. (1996) have proposed that this trend is also strongly related to the aim of building skills in new market sectors, such as the small cars in the USA, or the four-wheel drive, leisure vehicles, in Europe. Hamel (1991) and Teramoto et al. (1993) have shown that the Japanese firms particularly aim at the generation of knowledge through joint ventures with competitors. In contrast, Western firms seem to pay less attention to the acquisition of knowledge through interfirm co-operation.

Glaister and Buckley (1996, 304) have proposed the following reasons to explain why strategic alliances have become so trendy in the automotive industry. Festival, the production process in the automobile sector is characterised by economies of scale and learning by doing; thus, firms may attempt to reduce costs expanding out to achieve these benefits. Strategic alliances allow firms in the same industry to rationalise production, thus reducing costs through economies of scale and learning by doing, while avoiding the uncertainties and difficulties of full-scale merger (Mariti and Smiley, 1983). Production can be transferred to the lower cost location thus lowering procurement costs. Furthermore, the larger volume produced in the more advantageous location also provides further reductions in average unit costs by realising economies of large-scale production (Contractor and Lorange, 1988). Secondly, the alliances may be used to bring together complementary skills and talents that cover different aspects of the know-how needed in high technology industries, as well as the necessary manufacturing, scale and distribution outlets. Thirdly, strategic alliances may be used as a defensive ploy to reduce competition (Harrigan, 1985). Alternatively, linking with a rival in order to put some pressure on the profits and market share of a common competitor may be use an alliance as an offensive strategy. In fourth place, the

alliance formation may help firms to move to new foreign markets and to the development of either a multi-domestic or global strategy. The speed of market entry may therefore be an important determinant of the choice of entry mode (Gannon, 1993) Speed of entry must be balanced, however, against the associated cost and risk. Besides, a Multinational Enterprise (MNE) may decide that a strategic alliance may be very much preferred to a subsidiary, because it can provide various economic, political, and market access benefits to foreign partners.

As Figures 2, 3, and 4 illustrate, every international carmaker was involved in at least one IJV before 1996. According to these figures, it seems that in the 1990's, European car manufacturers are concentrating on their own region, with a local or regional production basis, and often a regional market basis. Their competitors are "multiregional" firms with important investments in South East Asia, Europe and North America. The business environment of the early eighties, whereby Rover and Seat signed their respective agreements, was a slightly different one, as shown by Figure 5.

INSERT FIGURES 2, 3, 4, and 5, ABOUT HERE

3. The Alliance Rover / Honda

As it has been described by Barrie (1995), Bertodo (1990), Hudson and Schamp (1995), Pilkington (1996), (1998), and Schill et el. (1994), among others, we have to look at the historical development of the firm to understand the reasons which led Rover to enter the relationship with Honda.

In the first years of the decade of the seventies, most of Rover's products lines were outdated and unprofitable and its dimension was not adequate to benefit from scale economies, making quite difficult for the carmaker to react to European and Japanese competitors. Austin Rover had the skills and resources to develop replacement models, but its programmes to replace its ageing models were behind schedule. After the merger of the majority of the British motor industry, i.e., Austin, Morris and Leyland in 1973, the "new" company was renamed British Leyland Motor Company (BLMC), and it was expected that this merger would allow to cut costs and retain market share (Church, 1994). Nevertheless, BLMC was unable to match the R&D levels of its main competitors: Ford UK and Vauxhall (GM). Suffering from strong financial problems, the firm invited the Government to intervene and the group was nationalised in December 1974.

The Ryder Plan Report, a Parliamentary study dated 1975, pointed out several important problems in BLMC, such as out-dated machinery and facilities, weak organisational structure and lack

of a common rational plan for all merged plants. In 1977 a new name was given to the firm, BL, as well as a new Managing Director, -Mr. Edwardes-, whose main task was to rationalise the models and markets of the company. The rationalisation trend led him to close down Speke and Seneffe in Belgium, as well as to dismantle some production lines at Cowley and the Land and Range Rover plant at Solihull. It implied to halve the production volume between 1977 and 1980. Furthermore, the plant near Oxford was reorganised to manufacture upper and medium cars.

The most challenging task was to radically change the awful reputation of the vehicles (poor quality and reliability) and to renew the product range. It was not going to be easy, since the design resources were very much chaotically mixed and had been cut in the believing that high volume manufacturing would become the solution for BL. Under such scenery, Edwardes (1983,193) considered that a Japanese partner would be much more convenient than a European one, and BL and Honda did at least have something to offer each other.

According to Schill et al. (1994, 263), Honda needed and wanted access to the European market, knowledge about that market, and the establishment of a local ring of suppliers in the U. K. capable of meeting its quality requirements. This would move Honda to compliance with local content regulators.

The 1979's deal with Honda was intended to provide a car model to produce for two or three years while the Montego/Maestro design was being completed. As Pilkington (1998) emphasises, *"Honda had design strengths in just the areas that had been allowed to let slip under the BL reorganisations: engines and gearboxes. BL, for its part, had European design studios, which would improve the styling of the Japanese products and make them more attractive to customers both at home and abroad. Honda's strength of organisation and efficient methods of production, together with the products themselves, were also seen by Edwardes as desirable role models to follow".*

Following Pilkington (1998) article, we have developed Figure 6, which aims at summarising how the strategic alliance affected the BL's capabilities on production and design from its earliest days till its take over by BMW in 1994.

INSERT FIGURE 6 ABOUT HERE

The first comment that should be made is that the influence of Honda-designed models on the Rover's reputation for reliability and quality was radical, notably improving its brand image. As productivity levels are concerned, not all Rover's facilities experienced the same changes in their production processes; thereby productivity figures diverge across the plants. After several planning mistakes and false economies in the first days, mainly due to the exactly replication of Honda

Japanese facilities in the U. K., the Longbridge facility has become a champion within Rover of the Honda way. Solihull, -the house of Land and Range Rover, has been little influenced by Honda, whereas Cowley only produces Honda-derived products. While Longbridge follows a Toyota approach as regards batch sizes and customer's options, Cowley has a lot tradition of mass producer, more closed to the Honda manufacturing approach.

As the venture grew and developed, Rover had come to rely on Honda for the majority of its product development activities (see the production figures in Table 1). It has maintained the core skills needed to develop new vehicles, like the Rover 100, but it does not have the financial resources to maintain vehicle development across the full range (see the profit trajectory in Table 1). In fact, the never-ending financial problems of the group led to its sale to BAe, but this sale didn't disturb the relationship with Honda Motor. Even more, since it had acquired a relative financial stability, the relationship was further strengthened.

INSERT TABLE 1, ABOUT HERE

An analysis of the current portfolio of Rover products evidences its reliance on Honda for design and development programmes (see Figure 6). The 800, 600, 400 and 200 series belong to the period of the joint development with Honda. The Rover 100 was developed from the Metro, the last big independent BL model programme, but had a new engine, -from the k-series, and a Peugeot gear-box; the Mini was an evolution of the 1960s design made on original production facilities. Pilkington (1998) remembers us that Rover could produce the ageing Metro and Mini models independently, but these were relatively unprofitable and did not alone represent a means of securing Rover's future. The Rover 100 is the only car produced by Rover which hold out any promise of a profitable, independent future. But, unfortunately, this was not sufficient to move away from Honda for the design of its other products. So far, Rover was caught in a vicious circle in which financial constraints limit the company's ability to design and develop new product fast enough to maintain its range. As a matter of fact, Rover failed to post any significant returns during its relationship with Honda (see Table 1). As Pilkington (1988) remarks, *"when Rover has made little or no cash surplus for the last twenty years, the rate and extent to which new models can be replaced and redesigned is limited"*.

Honda, on the other hand, concentrated on learning about the European market and gaining an understanding of the structure and nature of car manufacturing in Europe. It is now approaching the same production volume in the UK as the long established Nissan plant, but has a greater depth of presence in the supply base, which has already paid dividends during the slow down in the European market during the early 1990s.

In early 1994, BMW, a wealthy specialist, took over the majority of the British smaller volume producer, following a complete different approach to the one dominating the eighties' scenery, -volume producers acquiring specialists. According to Hudson and Schamp (1995, 236), the merger opened new market segments to BMW, broadening their product portfolio, mainly the small sized cars (Mini, Rover 100) and the off-roads vehicles (Land Rover and Range Rover). From the production and operations management point of view, it allowed BMW to use its diesel motor in the Rover models, as well as to achieve increasing economies of scale through the shared use of body platforms, -like is the case of BMW 5 and Rover 800. Furthermore, the German Company potentially gained access to Japanese production techniques and a useful, existing joint venture. Nevertheless, Honda almost immediately decided to pull of its fifteen years partnership with Rover after the take over. Initial press reports suggesting that Honda would pull out of the joint venture were rather speculative, but had this been the case, some 71 per cent of Rover's 1994 Honda-derived output would have been threatened by the run-down of contractual arrangements.

4 The Alliance Seat / Volkswagen

Seat started its activity in 1950, being its main shareholders several Spanish banks and the Torino (Italy) carmaker Fiat. This last company occupied several positions at the advisory board, provided the Spanish company with the required process technology and technical assistance, and gave the licences for the manufacturing of the Spanish versions of the Fiat models.

The economic development experienced by Spain in the 60's led to an enormous increasing of Seat indicators, as they pertain to sales, workforce and profitability. Nevertheless, it wasn't until 1967 that the company commenced to worry about its lack of strategic planning and its corresponding translation into the required technical and organisational infrastructure. Seat operated under an economic situation close to monopoly until 1972. In that year, the Spanish Government changed the regulatory framework, allowing foreign companies to operate in the country and to import all those car components which were not manufacturing in Spain, as well as the reinforcing of exports. This led to the opening of the Ford factory near Valencia, which was responsible for the manufacturing of the Ford Fiesta model.

Seat's share of the Spanish market stated its decline as far as 1974, mainly in the small size segment, and the company decided to abandon some models and to focus its efforts in the medium cars segment, like the Seat 127 model. According to Álvarez and González (1997), the domestic sales of Seat descended to a 29,94% in 1979, from a percentage of 51,2 in 1974. Such decline made Seat managers to consider the manufacturing of cars for exportation purposes, so that the over

capacity problems could be some way diluted. However, its export figures suffered a continuous decreasing, due to the fact that the company wasn't fully integrated in a multinational firm, and to its lack of all required capabilities related to R&D and New Product and Process Development.

These problems led Seat to ask for help and technical support from Fiat. Nevertheless, that company was facing important internal troubles (Conti and Enrietti, 1995) and refused to maintain its share in Seat, and the public owned Spanish holding named INI[1] took care of the company. Then, in 1981, Fiat ended up any kind of relationship with Seat and authorised the Spanish firm to establish all type of ventures with other carmakers. Seat needed to reduce its costs as much as possible, mainly by means of strategic changes in technologies including from concept development through production. It also required increasing quality as a means of achieving competitive differentiation, as well as to build some capabilities related to product variety and readiness for model changes. Of course, customer satisfaction levels would have to be increased.. Besides, Seat's product portfolio included a high number of Fiat's cars. This was, or could have been, a disadvantage for Seat, since the Torino firm had specialised in the lowest segments of the car markets. Thus, the Spanish company was bound to separate its image from that of Fiat. In addition, the Seat versions of the Fiat cars, i.e., the 131, 127/Fura, and Ritmo/Ronda models, were completely outdated, in spite of the fact that they were among the best sellers of the 1982 Spanish domestic market. Only the Panda model has a European look and performed pretty well in the European markets.

That these problems were well known by Seat executives is probed by the fact that its Corporate Strategic Plan for the period 1982-1986 recognised them and suggested action lines aiming at their solution. Such Plan stated, as the main long-term objectives of the firm, the following ones:

- to continuously keep an up-dated products range;
- to launch new models, easy to export to both South America and Europe;
- to develop two new models, completely designed and engineered by Seat, known as the models Ibiza and Málaga, and
- to launch new models derivated of already existing Volkswagen vehicles, like the Polo model and its versions, as well as the Passat and Variant models.

The INI holding was not interested at all in keeping Seat in its portfolio, but the Spanish economic, social, and political conditions of the early eighties discouraged to privatise the company. Seat managers were looking for alternatives that would allow the firm to renew its

[1] Instituto Nacional de Industria ("National Institute for the Industry").

technological base while keeping stable the work force scenery. Then, the INI started to explore suitable firms that will transfer the required technological update and financial support without firing any employee. It was not an easy task and several potential allies were contacted, such as the Japanese firms Nissan and Toyota. Finally, Seat was able to reach an agreement with the German company Volkswagen.

There were at least two main reasons for Volkswagen's relocating the production of small models in Spain: having access to the rapidly growing domestic market and the comparatively lower cost of a qualified workforce. So far, Volkswagen, which needed to keep a portion of the small-size models market, could accomplished it by manufacturing both the small Seat cars and the VW Polo model. VW could have wished to enter the Spanish market and industry with a wholly owned subsidiary, in order to maintain control over the foreign operation and co-ordinate its activities with those of other foreign subsidiaries. However, it would have been unable to do so because the local government imposed the above mentioned on foreign firms. In these instances, entering the market via an IJV seemed to be an acceptable, yet second-best, solution (Reuer, 1988).

Thus, both companies were interested in signing a Joint Venture that would allow Volkswagen to penetrate the Spanish market while Seat would develop some technological capabilities that it would learn from its partner. Still, it is very logic to assume that Volkswagen didn't want to risk too much resources and knowledge in Seat, since this late company was going to be privatised very soon. Just consider that the IJVs' value chain configuration of sourcing, production, marketing, and other activities may need adapting if the business were no longer to depend on a closely related selling partner (Bleeke and Ernst, 1995). Although there is no explicit evidence of it, it is very likely that that VW benefited from the possibility of negotiating a call option on its strategic alliance with seat. Such kind of options would have given VW the right, but not the obligation, to acquire Seat, negotiating the purchase price at the time of the IJV formation, i.e., in 1982.

In 1982 Seat and Volkswagen signed their strategic alliance, labelled as the "*Acuerdo de Cooperación Industrial, Licencia y Asistencia Técnica*"[2], which was estimated to last seven years. Seat wouldn't be able to manufacture Volkswagen vehicles until 1984, except for some lots of the Passat and Variants models, which would be manufactured at the Seat's plant of Zona Franca. From 1984 to 1988, Seat manufactured the VW's models Passat, Santana and Variant. Tables 2, 3, and 4, show the continuous increasing pace of the production of badge models, thus allowing the Spanish plants to amortise their fixed costs associated to the acquisitions of new product and process

[2] Agreement for Industrial Cooperation, Licensing and Technical Support

technologies, and enabling the VW's group to manufacture with lower costs than those observed at the German facilities. It would also permitted the increasing of the exports not only to Spain, but also to the countries in its influence area. As a matter of fact, the size of the exportation network increased from the 599 sale points of 1983 to the 2517 of 1987. Seat improved its brand image almost immediately, benefiting from the reputation of high quality and reliability that the German vehicle has achieved. Even the Seat logo (badge) was redesigned, as well as the brand image transmitted and publicised to the customers.

INSERT TABLES 2,3 AND 4, ABOUT HERE

As a consequence of the strategic alliance, Seat underwent a profound transformation, that included the upgrading of its workforce at the Landaben and Zona Franca facilities, the modernisation of the equipment and plants, and the re-organisation of the supply chain. These changes were aimed at enabling these facilities to manufacture the VW Polo Classic and Coupé at Landaben, -the original Authi plant near Pamplona, acquired by Seat, plant in 1984, -it was transformed into an assembly platform, and the Passat and Variant models in Zona Franca, whose production was initiated in 1982. Old Seat models, such as Seat 131, 127 Fura, Panda, and Ronda, were still in the portfolio of Seat in 1986, thus meaning that in Zona Franca different technologies, from state-of-the-art ones to the older equipment provided by Fiat several years ago, were being simultaneously used, with the corresponding problems that it might imply. As a matter of fact, the Seat facilities were clearly lacking of the advanced manufacturing technologies that its most relevant competitors were profusely employing at the beginning of the decade of the eighties. This obsolescence paired Seat's lagging behind other car makers located in Spain as regards the implementation of new operations management philosophies and models. Figure7 illustrate these points.

INSERT FIGURE 7, ABOUT HERE

Seat was able to launch two new models in 1984, the Ibiza model, and in 1985, the Málaga, that were manufactured, as well, at Zona Franca. Only the Ibiza was a Seat model, because the Málaga one was an adaptation of the VW Jetta. Álvarez and González (1997,) affirmed that Seat had a very large portfolio along the period 1983-86, in spite of the fact that the units produced remained practically fixed, showing a strategy that clearly diverged from the one followed by their Spanish competitors at the time. Such strategy disturbed Seat from focusing in the development of

completely new models like it had done in the years previous to 1984 with its Ibiza. Instead, Seat R&D people started to learn how to incorporate advances from VW models into the Seat models, and how to improve the manufacturing process and even the design of the VW badge models manufactured in Spain.

To summarise, Seat was able to achieve its corporate strategic goals, since it broadened its export network, could use its over capacity for manufacturing high reputation models like VW Passat, Variant and Polo, it improved its brand image and could increase the quality levels of its car as well as their innovation degree. Moreover, it was able to launch the Ibiza and Málaga models, in spite of the fact that this late one was inspired in the VW technology instead of being a completely new car.

In 1986, Volkswagen decided to end up with the alliance and acquire Seat. Then, the Spanish car marker became the third member of the VW Consortium, together with VW and Audi. The German company pursued a singular strategy in the eighties, dedicating one model to one plant and keeping Seat as a separate make of small cars. As Shown by Table 5, Seat facility at Landaben has largely contribute to the success of the Polo in Europe, since it is a reliable model that can be sold at a reasonable price, as its relatively cheaper manufacturing costs permit it.

INSERT TABLE 5, ABOUT HERE

This strategy was continued in the early 90s, when VW took over Skoda with the aim of penetrating the East European markets with small cars. As the other German automobile producers, it created a segmentation between foreign production sites in the European fringe, producing mainly small cars, and domestic production, while retaining capacities and competencies for R&D and production of larger, more expensive models in Germany (Schamp, 1995).

We have elaborated the Figure 8 aiming at summarising the evolution of the new product development process at Seat. We have considered both its joint venture with Volkswagen and its privatisation and take over by VW.

INSERT FIGURE 8, ABOUT HERE

5. The consequences of the strategic alliances for Rover and Seat

As it was previously suggested in Section 2, it is very likely that Honda were looking for an entrance not only in the European car market, but in the UK components market as well, when it

signed its strategic alliance with Rover. By so doing, Honda would be able to warranty to its long-term Japanese suppliers the economic feasibility of their investments and innovations. Such innovations were strongly related to Honda capability to launch new products, to the possibility of obtaining economies of scale and learning by doing, and to the fast recovering of investments that lower manufacturing costs make possible.

It seems that Rover managers were aware of Honda's objectives, this fact explaining why the 1979's deal with Honda was explicitly limited to the development of a car model to produced for two or three years while the Montego/Maestro design was being finished. However, Rover became more and more involved in manufacturing badge products and in "roverising" the Honda models. Schill et al., (1994, 262) pointed out that *"Rover managers realised that the company was to be in a situation where 70 percent of the car would be bought-in"*. They decided that the firm had to make sure that the remaining 30 percent were high value-added for Rover and that the firm achieved a centre of excellence on those key items. According to such objective, Rover built vertical alliances in these parts of the value-added chain that will link and support the internal centres of excellence.

Honda supported this policy of Rover, since the collective action of the partners that provide technology, complementary capabilities, and resources will assist each other in achieving objectives in different segments of the automotive industry. Furthermore, it would provide sufficient 'critical mass' to make feasible the development of a regional network of allied key suppliers in the Midlands of the UK as well. Such policy implied that Rover would have to concentrate on developing and manufacturing high value-added components, while, at the same time, it would have to be specially careful selecting those components and systems that are perceived by the customers as important technological signals. Thus, Rover's functional overlap pertained to R&D, product development, manufacturing quality assurance, and reduction of the product cycle-areas of corporate capability that spanned several functional activities within both companies.

Schill et al. (1994) pointed out that the whole UK industry benefited from the horizontal and vertical alliances of Rover, which allowed the car components industry to achieve the following distinctive capabilities:

- Better focused and improved core competencies;
- Substantial decrease in the rate of innovation time to the market;
- Substantial cost reductions for the vertically allied firms;
- Integrated development and reduced duplication.

When analysing the success of the alliance signed by Rover and Honda, as it pertains to the development of the core capabilities linked to the new product design and development processes, the available information is contradictory, thus confirming our hypothesis of technological

addiction. Effectively, one hand it seems as if Rover was initially looking for a situation of *"convergent development"*(Nakamura et al., 1996), which would allow the firm to learn from Honda, while keeping its distinctive competencies in engine's and key components design related activities. As a matter of fact, at the time the alliance ceased, Rover was able to manufacture the Metro and Mini models, which were quite unprofitable, and the Rover 100, the only profitable model in Rover's medium and long-term portfolio. The British firm was also capable to design new series of engines. On the other hand, as we have already cited in Section 3 (see Table 1), Pilkington (1998) has manifested that Rover was completely unable to post any significant return during its relationship with Honda. We are facing, then, a case where the financial constraints have prevented a firm to emphasise its R&D capabilities, so that it has looked for an alternative way to access the required knowledge instead of its acquisition. Thus, a *"divergent development"* has taken place instead of the effect the firm was looking for. Since Rover has been unable to react to this type of non-wished effect, we affirm that it was technologically addicted to Honda.

Opposite to Japanese firms, the common strategy among European individual producers has been an upgrading of the functions of the European core. In the case of VW it means the allocation of the manufacturing of the core components, -power train, suspension, cockpits, engines, and platforms-, in Wolfsburg. The different brands in the consortium are responsible for the design and manufacturing of the so-called "hüt" (chassis), which implies that both Seat and Skoda are competing with VW's core plant at Wolfsburg for R&D functions. The increasing competencies in R&D efforts and responsibilities are partially shared by first tier systems suppliers, as part of long-term collaborative agreements. Thus, some high value-added activities, like engine production and development, use to be kept under the reins of the parent company. This strategy explains why VW never helped Seat to increase those of its core capabilities associated to the design and development of the key components of its vehicles. It didn't allow the Spanish firm to manufacture high value-added elements, such as VW badge engines, power trains, platforms, etc., probably as a means of decreasing the potential development of some learning by doing effect.

After the take over in 1986, Seat became the third brand of the VW Consortium, and it has enjoyed some autonomy to manage the distribution channels of its own vehicles. From 1987 till 1990, Seat concentrated all its R&D efforts in the re-styling of its Ibiza and Málaga models. Besides, the Landaben plant was renewed in 1987 to manufacture the third face-lifts of VW Polo Coupé. In 1988 relevant investments were made in the plant at Zona franca, looking for reducing the most relevant bottlenecks. In 1990 new investments were made in Landaben as to allow such facility to manufacture 1.200 units per day of the Polo engines, and one year later, it was necessary to increase its manufacturing capacity in order to increase its capacity to 1.000 vehicles per day.

Heavy modernisation efforts took place in Zona Franca for the launching of the new model Toledo. This new model, which combines the VW platform with a "Mediterranean" design of its "hüt", -the style of Seat R& D people, is the first example of how Seat increased its absorptive capacity, -which means according to Lane and Lubatkin (1998, 462), its ability to value, assimilate, and apply knowledge from a learning alliance partner, as it grew familiar with the set of organisational problems of VW. Then, the Toledo car constitutes a first hand example of Lane and Lubatkin (1998, 465) work hypothesis, which establishes that *"the more familiar the student partner is with the problems and projects that the teachers prefers, the more readily it will be able to commercially apply new knowledge from that teacher"*. The only problem, but not irrelevant to our purposes, is that Seat and VW stopped being partners by 1986.

These situations have being experienced again with the launching of the Ibiza New Style, and the new model Córdoba (1992). Seat has also participated in the design of the Inca (1995) and Alhambra models (1996). Obviously, it could not have manufactured all of them at Zona Franca, so, a new, state of the art facility, was built by 1993, known as the Martorell plant. After a transitional stage, the Zona Franca facility was closed down and the manufacturing of Seat cars, and several badge models, was moved to Martorell.

However, Seat designers and engineers have been able to design two new cars from scratch, with the solely exception of the platform, -VW has imposed to all the Consortium members to share the same platforms. This is the case of the Arosa model, launched in 1997. And it has been also the case of the "New Toledo" model, launched in 1998. We consider these success as very relevant to our study, since they show that Seat interest on developing its new models, as expressed by its 1983 Corporate Plan (see Section 4), in spite of it many difficulties, is finally coming to a happy end.

We can classify Seat and VW strategic alliance as one of the type of *"divergent development"*(Nakamura et al., 1996), since there was no technological overlap between Seat and Volkswagen during its relationship. At that time, any kind of knowledge and capabilities that Seat might have required for manufacturing the badge models was accessed from VW, although some constraints were settled to prevent Seat from learning "too much". However, since VW had always considered to acquire Seat when it were privatised, some type of *"convergent development"* happened to surge. Such learning may remain latent until a situation where it is required takes place. Then, since this situation did not take place before the privatisation, VW did not have to pay for it. This coincide with the theoretical framework that suggests that *"the parent firm performance implications of sign an IJV are therefore not only a function of benefits and costs obtained from operating the business, but also the way in which the IJVs' resources are priced upon termination. Even more broadly, the total impact of a venture on parent firms depends upon how firms manage*

all IJV life-cycle stages, ranging from partner scanning to partner selection and negotiation to setting up and implementing the venture to the IJVs' ultimate termination"(Reuer, 1998) .

Some years later, when the Martorell plant commenced to get some profitability from the enormous investments that were made and the huge crisis of 1993 was very far away, that *"convergent development"* re-appeared.

Another interesting effect of the Seat/VW 1982's agreement is that along the last decade, carmakers and component manufacturers in Spain have perfecting of the rationalisation process as well as the implementation of the Lean Production strategies. Some examples are the closing of the "montaje 1" of FASA-Renault in 1990, and the drastical reduction of the production in the Zona Franca (Seat) plant. Moreover, the Spanish automobile Industry has seen the increasing internalisation of components, which are replaced by imports from the parent company or procurement from suppliers. Thus, local subsidiaries have become more integrated into the international production chain of the parent companies. In 1993, the Parque Industrial de Premontaje (PIPS) opened its doors for 15 component suppliers to the new flexible Martorell plant of Seat, producing the new Ibiza model near Barcelona.

The literature on Rover and Seat (Álvarez and González, 1997; González, 1998; Pilkington, 1996, 1998; Schill et al. 1994) does not include as yet too much empirical data about the financial and non-financial indicators of the success or failure of their alliances. It is easy to understand since competitive reasons use to prevent companies from providing sensible data to the academicians. We have tried to summarise it in Figure 9.

6. Managerial implications and suggestions for further research

This study provides some guidelines for managers when it comes to forming successful strategic alliances with a view to developing the unique assets of the companies involved. Forming the alliances needs to be considered very carefully by the participating companies.

The cases analysed here fulfil the prerequisites suggested by Beamish and Inkpen (1995, 34) for an alliance to become operational, i.e., both Rover and Seat enjoyed, prior to the venture, three broad areas of knowledge: customer knowledge, manufacturing product and process knowledge, and local operational knowledge.

INSERT FIGURE 9, ABOUT HERE

The two alliances here analysed are very similar from the point of view that they only concerned certain projects covering the development of specific vehicles. The companies maintained a distance between each other, and developed separate product plans -Rover and Seat incorporating Honda and Volkswagen models into its own plans when these were offered[3]. They also coincide in some of the reasons moving their teachers partners to agree with having them as student allies, i.e., the foreign partners, -Honda and Volkswagen, were seeking to expand its geographic scope of operations, and then, the local partner's knowledge of local economic, political, and cultural environments could be an essential contribution to the joint venture. Besides, both companies belong now to German companies and have started to say good buy to red financial figures. And, what is more important, they became technological addicted to its teacher partners.

However, they differ in the form in which their strategic alliances ceased, and also in the trajectory of their learning processes. In Rover case, what started as a "convergent development" joint venture, ended up as a "divergent development". The opposite is true in the Seat case. As Mowery et al., (1996) advanced: "*the learning that takes place within alliances thus appear to be more complex than most of the literature on this topic suggests, underlining the need for better definitions of learning in theoretical discussions of alliance activity and high lighting this as an area ripe for further study*".

Most salients observations from our study are:

i.- We have empirically contrasted that student firms have the greatest potential to learn from teachers with similar basic knowledge, but different specialised knowledge is often the motivation for establishing interorganisational collaborations, as suggested by Hamel (1991).

ii.- Our study confirms also that alliances should be considered as mutual dynamic learning devices in which the process of learning is critical, as well as participating in the process, not the exchange of outcomes, as it has been proposed by Glaister and Buckley (1996)

iii.- One valuable capability that both Rover and Seat have learned from their teachers partners is the tailoring of existing designs from other manufacturers to produce `Roverised' products. Unfortunately, neither Rover, nor Seat, learned enough from their teachers and the ever-greater lack of design capability (both in terms of expertise and resource) was manifest in the management of Rover and Seat limited new model programmes.

iv.- As suggested by Schill et al. (1994, 625), our article raises the issue of learning how to learn as

[3] It is very likely that both "big",-or "teachers", partners shared some of the costs with their "child", -or "students", partners in return for manufacturing rights

a competitive advantage: both Rover and Seat were interesting investments for BMW and VW, in spite of their relative failure in their learning processes. Rover and seat cases show that it is the rate of learning and not just the learning itself that is important.

Our results suggest the need for a richer conceptual framework in considering the effects of alliance activity on firm-specific knowledge and capabilities. The approach provides a platform to further investigate each of the areas in our framework and provides a point of integration for more specialised research. For instance, our study can be extended to the learning process of the British and Spanish OEMs Industry, to identify how their new products and process development activities have been affected by the technological addiction of some of its main customers. As well, the approach may help forge a better alignment between academic descriptions and prescriptions and the reality faced by managers.

Mowery et al. (1996, 89) emphasised that *"Research on resource –and knowledge-based views of the firm, along with related work on interfirm alliances, has been tampered by the lack of measures of firm-specific capabilities. These difficulties have meant that discussion of the motives and effects of alliance activity has proceeded in a virtual empirical vacuum, and competing views of alliance activity have rarely brought into sharp focus."* We hope that our paper can raise interesting issues that help other researchers to suggest new sets of measures.

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Appendix:

Figure 1: Review of the literature of strategic alliances (Based in Sϕrensen and Reve, 1998, 152)

Research line	Main argument
Resource-dependent approach, Pfeffer and Salancik, 1978	The company tries to control the assets which can minimise its dependence on the environment
Transaction Cost Theory, Williamson, 1979, 1981, 1985, 1991	Knowing its efficiency border, the company has to decide whether it should make or buy its assets, or whether it should rely on alliances
Political Economy Approach, Benson, 1975, Stern and Reve, 1980	The economic system and the socio-political system jointly influence collective behaviour and performance
Agency Theory, Fama, 1980, Hart and Holmstrom, 1987	The basic organisational question is how to align principal and agent interests
Relational Contracting Theory, Hakanson, 1982, , Axelson and Easton, 1992, etc.	Trust plays a mayor part in the development of co-operative alliances
Interaction Approach	Not only trust and confidence are important, but the process of relationship formation as well
Competitive positioning models, Porter, 1980, Buckley et al. 1988	Companies with unique assets enter unto relationships with other companies with similar assets to improve their economic performance

Figure 2: Alliances of the European carmakers until 1996

Firm	Equity-sharing	Joint-venture	Procurement	Distribution	Technological agreement	Assembly agreement
Volkswagen (Germany) (includes Audi, Seat, Skoda)	BAZ	CNAIC, First Auto Works, Ford (Auto Latin, Auto Europe), Mercedes- Benz, Toyota (Hilux)	BAZ, CNAIC, First Auto Work, Ford, Nissan, Rover, Volvo	Toyota	First Auto Works, Porsche, Toyota	BAZ, First Auto Works Porsche, Toyota
Fiat (Italy): (includes Alfa Romeo, Autobianchi, Ferrari, Iveco, Lancia, Innocenti, FSM)	Zastava, BAZ	Ford, Peugeot	Ford, Fuji Heavy (Subaru) GM, Peugeot, Renault, Steyr	Ford, Mazda	Fuji Heavy, Nissan	Bertone, Mazda, Pininfarina
PSA (France) (Includes Peugeot, Citröen)		Daihatsu, Fiat, Renault Rover, Suzuki	Fiat, Nissan, Renault, Rover, Steyr	CAC, Mazda	Daihatsu, Renault	CAC, Chrysler, Honda Isuzu, Pininfarina, Renault
Renault (France)	Volvo	Peugeot, Toyota, Volvo	Fiat, Ford, GM, Mitsubishi, Peugeot, Volvo, Fuji Heavy (Subaru)	GM	Peugeot, Volvo	Peugeot
Mercedes-Benz (Germany)	GM	Mitsubishi	Mitsubishi	Cycle & Carriage	Mazda	Cycle & Carriage
	Ssangyong	Volkswagen	Porsche, Ssangyong	Mitsubishi, Ssangyong	Porsche, Ssangyong	Honda, Porsche, Ssangyong
Rover (United Kingdom)	Honda	Honda Peugeot	Chrysler, FSO, GM, Honda, Peugeot, Volkswagen	Honda	Honda	Ford
BMW (Germany)	Rover		Bertone, Daihatsu			Ford
Porsche (Germany)			Mercedes-Benz		Mazda, Mercedes-Benz Volkswagen, Volvo	Mercedes-Benz, Volkswagen
Volvo (Sweden)	Renault	Ford, GM, Mitsubishi Renault	Fuji Heavy (Subaru), Mitsubishi, Renault, Volkswagen	Daewoo, Fuji Heavy, Isuzu	Isuzu, Mitsubishi, Porsche, Renault	Fuji Heavy

Source: Yoshino and Srinivasa (1996,26-31), Pilkington (1996,91)

Figure 3: Alliances of the USA carmakers until 1996:

Firm	Joint-venture	Procurement	Distribution	Technological agreement	Assembly agreement
General Motors: (includes Opel, Vauxhall, Holden's Saturn, Saab)	Chrysler, Daewoo Ford, FSO, Isuzu, Nissan, Suzuki, Toyota, Volvo, Gold Cup	Fiat, Fuji Heavy (Subaru), Honda, Isuzu, Mitsubishi, Nissan, Renault, VAZ Rover, Suzuki, Toyota, VAZ	CAC, Isuzu, Renault, Toyota	Chrysler, Ford, Honda, Isuzu, Suzuki, Toyota	Bertone, CAC, Daewoo, Isuzu, Suzuki
Ford (includes Jaguar)	Fiat, GM, Mazda, Nissan, Toyota, Volkswagen, Volvo	AZLK, Fiat, Fuji Heavy (Subaru), Mazda, Nissan, Renault, Volkswagen	Fiat, Kia, Mazda, Suzuki	Chrysler, GM, Kia, Mazda, Nissan	BMW, Kia, Mazda, Nissan, Rover, Suzuki
Chrysler	Bejing Auto, GM, De Tomasso Styer, Mitsubishi	Bejing Auto, Mitsubishi, Rover, Steyr, Fiat	Honda, VAZ, Fiat	Bejing Auto, Ford, GM, Mitsubishi, Steyr	Mitsubishi, Peugeot, Steyr

Source: Yoshino and Srinivasa (1996,26-31), Pilkington (1996,91).

Figure 4: Alliances of the Japanese carmakers until 1996:

Firm	Equity Sharing	Joint-venture	Procurement	Distribution	Technological agreement	Assembly agreement
Toyota	Daihatsu	Daihatsu, Ford, GM Nissan, Renault, Volkswagen	Daihatsu GM	Daihatsu, GM, Volkswagen	Daihatsu, GM, Nissan, Volkswagen	CNAIC, Daihatsu, Volkswagen
Nissan	Fuji Heavy (Subaru), Siam Motors, Yulon	Ford, Fuji Heavy, GM, Toyota	Daewoo, Ford, Fuji Heavy, GM, Peugeot, Second Auto Works, Volkswagen, Yulon	Fuji Heavy, Mazda	Daewoo, Fiat, Ford, Fuji Heavy, Mazda, Second Auto Works, Toyota	Ford, Fuji Heavy Siam Motors, Yulon
Honda	Rover	Mitsubishi, Rover	Daewoo, GM, Mitsubishi, Rover	Chrysler, Daewoo, Rover	Daewoo, GM, Rover	Daewoo, Isuzu, Peugeot, Mercedes-Benz, Mitsubishi
Mazda	Ford, Kia	Ford, Isuzu	Ford, Isuzu, Kia Mitsubishi, Suzuki	Cycle & Carriage, Fiat, Ford, Isuzu, Kia, Nissan, Peugeot	Ford, Kia, Mercedes-Benz Nissan, Porsche	Cycle & Carriage, Fiat, Ford, Kia, Suzuki
Mitsubishi	China Motors, Hyundai, Proton	Chrysler, Honda, Mercedes-Benz, Suzuki, Volvo	Chrysler, GM, Honda, Hyundai, Mazda, Mercedes-Benz, Proton, Renault, Volvo	Hyundai, Mercedes-Benz,	Chrysler, Hyundai, Proton Volvo	China Motors, Chrysler, Honda, Isuzu
Suzuki	GM	GM, Mitsubishi, Peugeot	Daewoo GM Mazda	Ford	Daewoo, GM	First Auto Workers, Ford, GM, Mazda
Fuji Heavy (Subaru)	Nissan	Isuzu, Nissan, Siam Motors	Fiat, Ford, GM, Nissan, Volvo	Nissan, Volvo	Fiat, Nissan	Nissan, Volvo
Daihatsu	Toyota	Peugeot, Toyota	BMW, Kia, Toyota	Toyota	Kia, Peugeot, Toyota	Bertone, Toyota
Isuzu	GM	Fuji Heavy, GM, Mazda	Daewoo, GM, Mazda	GM, Mazda, Volvo	Daewoo, GM, Volvo	GM, Honda, Mitsubishi, Peugeot

Source: Yoshino and Srinivasa (1996,26-31), Pilkington (1996,91)

Figure 5: Alliances in the automobile industry prior to 1996:

Firm	Equity Sharing	Joint-venture	Procurement
Volkswagen (Germany) (includes Audi)	Porsche		Seat, Nissan
PSA (France) (Includes Peugeot y Citröen)	Chrysler	Renault, Volvo	
Renault (France)	Volvo, AMC	PSA	
Rover (U. K.)			Honda
General Motors (USA) (includes Opel, Vauxhall)	Isuzu, Suzuki	Toyota, Daewoo	Nissan
Ford (USA) (includes Ford Europa)	Mazda		
Chrysler (USA)	PSA, Mitsubishi		
Toyota (Japan)	Lotus	General Motors	
Nissan (Japan)	Motor Ibérica, Subaru	Alfa Romeo	General Motors, Volkswagen
Mitsubishi (Japan)	Hyundai		Daimler-Benz

Source: Burgner, 1986

Figure 6: Rover's portfolio of new models after its alliance with Honda

MODEL	FACTORS AGAINST THE ORGANISATIONAL LEARNING AT ROVER FACILITIES AND R & D CENTERS	FACTORS PRO DEVELOPMENT OF DESIGN AND MANUFACTURING CAPABILITIES OF ROVER
Triumph Acclaim	• Licensing for an existing Honda model • Little impact on BL Capabilities • Acquisition of a Honda production facility and the majority of the parts	• Commercial Success
Rover 200 (1984)	• Honda's engineers designed the mechanics • Honda powered the 1300cc version • Poor quality levels of the Honda badges manufactured at Longbridge • Postponement of programmes to replace the ageing product range with internally designed products • The production facilities duplicated Honda's facilities in Japan	• Partly designed by BL, to distinguish its model from the Honda Ballade • Rover produced the 1600cc engine and gearbox
Rover 800 / Honda Legend	• The greatest part of the design and all decisions concerning vehicles performance remained with Honda • Large numbers of parts have to be bought from Honda, mainly gearboxes and most of engines. • The facilities designed by Honda only allow producing 15 unique variants, in spite of the fact that the commercial policy of BL manages many millions of "unique" products.	• Rover manufactured the 2.0 litres engine
Rover 200/400 (1990)	• Rover was left to adapt the design so that more luxurious vehicles could complement the product range • The re-styling is against the usual practices of Japanese firms. • Rover invested most of its design resources in the continuous updating of its existing model • Rover had become dependent on Honda as regards New Product Development	• Some Rover engines, designed for the Rover 800, were incorporated to expand the product range, like the 1600cc vehicle, and 1400cc Rover K-series powered cars • Some diesel versions were also developed • The Honda Concept was manufactured at Longbridge
Sterling	• Face-lift of Rover 800 • Models overpriced, poor ratio quality/price • Poor customer service	
Rover 600 / Honda Accord	• A Honda car with interiors that match the Rover brand image • Serious overcapacity and financial troubles due to the investment in splendid tri-axis press for the Swindon plant • Honda is investing in other locations in the UK	
Rover 400/Honda Civic (1995)	• Face-lift of the Rover 200/400, new body-styling and minimal mechanical alterations • All Rover's design resources were devoted to these minor developments	• New 1600cc and 1800cc versions of the K-series engines

Figure 7: Process innovations in the Spanish automobile industry in 1986.

Innovation	GM	Ford	Renault	Seat	Citröen	Peugeot -Talbot
No. of robots in 1982	149	3	38	20	21	4
No. of robots in 1986	174	108	89	83	58	10
CAPP (or similar)	Yes	Yes	Yes	Yes	No	Yes
CAD/CAM	No	No	No	No	No	No
Quality Circles	Partial development	Yes	No	No	No	Starting
JIT mfg	Yes	Yes	No	No	No	No

Source: Alvarez and González, 1997.

Figure 8: Seat's portfolio of new models after its alliance with Volkswagen

Year	Launching of New Models	Designed and engineered by
1982	Polo	VW
	Panda models: Marbella, Montaña and Bavaria	Seat (with Fiat engines)
	Ritmo/Ronda	Fiat: Re-styling of Ritmo Fiat
1984	Polo Classic, Polo Coupé	VW: Re-styling of Polo
	Ibiza	Seat (with Giugiaro design, Porsche, System engine, Diesel engine options, etc.)
1985	Málaga	VW: Re-styling of Jetta VW
NEW MODELS AFTER THE TAKE OVER BY VOLKSWAGEN		
1987	3 new versions of Málaga First re-styling of Ibiza	mainly VW, with some Mediterranean touch
1989	Ibiza II	Seat, with the VW's platform
1990	Toledo	VW: platform and core, high added-value components / Seat: Chassis and Mediterranean touch
	3rd re-styling of Polo	VW
1991	Ibiza New Style	Seat, with the VW's platform
1992	Córdoba	VW: platform and core, high added-value components / Seat: Chassis and Mediterranean touch
1995	Inca	VW: platform and core, high added-value components / Seat: Chassis and Mediterranean touch
1996	Alhambra	Auto Europa, with high levels of involvement for Seat
1997	Arosa	Mainly Seat, with a VW's platform.
1998	New Toledo	Mainly Seat, with a VW's platform

Figure 9: Competitive capabilities developed by Rover and Seat as results of the alliance

Competitive capabilities
• Lower costs: due to the out-sourcing practices and the collaborative manufacturing • Technology transfer: new production methods were implemented, and new equipment was installed to manufacture both the badge and own vehicles • Quality improvement • Cycle reduction: up to one third below the cycle time before the alliance • Europeanisation: the distribution networks expanded notoriously in both cases • Flexibility: both companies were able to fill very quickly their customers orders as a consequence of the high commonality between the car components • JIT procurement

- **Tables:**

Table 1. The Effect of the Alliance on Rover's Fortunes. (Pilkington, 1998)

Year	Turnover (£M)	Profit /(Loss) (£M)	Rover Units*	Honda units
1981	2,869	(503)	367,875	20,447
1982	3,072	(300)	311,814	58,025
1983	3,421	(142)	383,141	50,042
1984	3,402	80	339,784	31,643
1985	3,415	(138)	385,048	65,844
1986	3,412	(892)	311,231	78,737
1987	3,096	(26)	313,436	137,290
1988	1,179#	35	304,605	145,970
1989	3,430	64	294,831	139,985
1990	3,785	55	229,775	187,576
1991	3,744	(52)	154,046	205,905
1992	3,684	(49)	122,400	216,654

Notes: *excluding Land Rover; #part year figure from BAe Report. Source: Adapted from Pilkington (1998, 8)

Table 2: Car units manufactured by Seat (1984-1992)

Year	Seat	VW
1984	225.548	53.438
1985	224.892	95.319
1986	231.885	106.663
1987	275.151	131.240
1988	327.737	105.745
1989	350.034	124.115
1990	361.629	143.750
1991	360.510	191.700
1992	356.210	222.222

Source: González (1998), compiled from Company Reports and Accounts

Table 3: Number of vehicles exported by Seat (1984-1992)

Year	Seat	VW	VW's % of total exports
1984	131.895	17.038	11.44%
1985	153.562	53.852	25.96%
1986	120.254	69.197	36.53%
1987	158.118	87.863	35.72%
1988	193.499	75.941	28.18%
1989	223.165	98.699	30.66%
1990	243.165	125.406	33.99%
1991	260.623	177.595	40.53%
1992	253.313	212.092	45.67%

Source: González (1998), compiled from: Company Reports and Accounts

Table 4: Car models sold and imported by Seat for its domestic market (1984-1992)

Year	SEAT(1)	VW-Audi (2)	TOTAL (1) + (2)	Imported VW-Audi units
1984	128.334	22.360	150.694	1.730
1985	85.923	42.968	128.891	5.759
1986	99.866	39.383	148.434	9.185
1987	123.867	39.894	187.529	23.768
1988	131.238	87.947	219.185	55.028
1989	125.419	113.839	239.258	65.035
1990	118.778	96.901	215.679	71.308
1991	97.198	81.757	178.955	56.233
1992	102.208	80.546	182.754	65.430

Source: González (1998), compiled from Company Reports and Accounts

Table 5: The manufacturing of the POLO (VW)

Year	Total number of units	Germany	Spain
1988	215.332	110.716	104.616
1999	228.867	104.752	116.095

Source: EIU (1991, 78-9)