Strategic Alliances - Trick or Treat? - The Case of Scania

Nilsson, Carl-Henric

Published in:
International Journal of Production Economics

DOI:
10.1016/S0925-5273(96)00123-5

1997

Document Version:
Publisher's PDF, also known as Version of record

ELSEVIER

Int. J. Production Economics 52 (1997) 147–160

international journal of
production
economics

Strategic alliances, trick or treat? The case of Scania

Carl-Henric Nilsson*

Department of Business Administration, School of Economics and Management, Lund University, Box 7080, S-220 07 Lund, Sweden

Abstract

The literature on strategic alliances is vast. Most authors are pro-alliances and the casual reader may thereby be lulled into a false sense of security concerning the advantages of strategic alliances. There are several possible advantages of strategic alliances however by joining an alliance several opportunities are also forsaken. The opposite strategic option, a "go it alone strategy" generates several strategic advantages which would be difficult to gain in a strategic alliance. The literature on strategic alliances is reviewed concerning the motives for forming alliances and the way in which examples of alliances are used, and misused, in the literature by scholars. The case of Scania, the Swedish heavy truck producer, is then presented as an example of the strategic advantages that can be achieved by *not* entering into horizontal strategic alliances.

Keywords: Strategic alliance; Competitive advantage; Flexibility; Economies of scale; Time based competition

1. Introduction

The nature of cooperation, or rather the purpose of cooperating, has shifted towards issues concerning the business concept of the enterprise [1, p. 315]. These issues are strategic in nature and will intrinsically, through the strategic aspects, have substantial and long-term effects on the enterprise. One cooperative form is called strategic alliance and is directed at utilising the advantages of sharing. The opposite form, based on the idea of non-cooperation, is labelled "go it alone strategy" [2] and is aimed at being strong on your own and utilising the advantages of not having to collaborate.

Earlier research (e.g. [2–4]) concerning strategic alliances has largely been directed at presenting general explanations for several different types of agreements: national and international, horizontal, vertical and diversified. Arguments are also often presented irrespective of industry- and company-specific prerequisites. Competitive forces are, however, contingent on the specific industry. It is therefore questionable whether one can use a "cookbook of recipes" to increase the competitive position of any company in any industry.

Companies that have consciously chosen not to enter into alliances are rarities in the literature and should be better investigated by scholars in order to further advance the research on strategic

* E-mail: Carl-Henric.Nilsson@fek.lu.se.

PII S0925-5273(96)00123-5

alliances. In this paper, I will describe the case of Scania, the Swedish heavy truck producer, and the only company, in the heavy truck industry, that has deliberately chosen not to enter into horizontal strategic alliances. Scania has for a long period of time been able to generate profits substantially higher than the average for the heavy truck industry.

The objective of this paper is to demonstrate that strategic alliances are not always the panacea they are often believed to be. The failure rate of alliances and joint ventures, as reported in the literature, varies between 30% and 75% [2, 5–9]. Many advantages that are accredited to collaboration can also be achieved with a "go it alone strategy". The case of Scania is presented as an illustration. Particular emphasis is placed on factors related to Scania's strategic choice to remain outside alliances and their relationship to the performance of the company. The presentation is divided in three parts. Firstly, previous research on strategic alliances is discussed. Secondly, the case of Scania is presented, and thirdly, conclusions are drawn based on the theory of strategic alliances and the case of Scania.

2. Strategic alliances

Devlin and Bleackley [2, p. 18] propose that "strategic alliances take place in the context of a company's long-term strategic plan and seek to improve or dramatically change a company's competitive position". The authors arrange strategic alliances on a scale of strategic options, between mergers and "go it alone". Strategic alliances can be moulded into several different forms. Joint ventures is a frequently used form of cooperation and many authors' definitions of joint venture fall within the definition of strategic alliances. Shenkar and Zeira [10, p. 547] define joint ventures as "an enterprise, cooperation or partnership formed by two or more companies, individuals, or organisations, at least one of which is an operating entity which wishes to broaden its activities for the purpose of conducting a new, profit-motivated business of permanent duration. In general, the ownership is shared by the participants with more or less equal equity distribution and without dominance by one party". Joint ventures can thus be regarded as a special type of strategic alliance in which shared ownership is involved (cf. [11]). To define strategic alliances in an indisputable way is hard. However I adopt a broad working definition from [12]. "A strategic alliance must fulfil two major criteria: it has to be an alliance, i.e. more than one company involved, excluding mergers and acquisitions, and the alliance must be strategic, that is it must have a substantial impact on each participating company's long-term goal, thus excluding, for instance, short-term supplier agreements."

Cooperative arrangements can be formed in three principle directions: *horizontally*, between companies operating in the same industry, *vertically*, backwards in the value system to the suppliers or forwards to the customers, or finally *unrelated*. The prerequisites, as well as the implications, of these directions are quite different from each other. A three-by-three space of company relations can thus be defined: mergers and acquisitions, strategic alliances, short-term agreements in one dimension, and horizontally, vertically or unrelated in the other dimension. In this paper, I will limit the discussion to alliances and focus on aspects in the horizontal direction, the vertical will however also be discussed.

2.1. Current research

Research in the field of alliances is abundant. Anderson [13] searched two databases for information on joint ventures. "The search uncovered more than 3000 articles and books that appeared within the last two decades" [13, p. 20]. Reviewing a more modest number of articles and books, I found them to address one or several of the following basic topics. *Frameworks for analysis* of alliances, *motives* for alliances and several *examples*, often of successful alliances. Furthermore, *partner selection* and *control mechanisms* for the alliances were recurrent issues. In addition, *success factors* and *pitfalls* of alliances were frequently discussed, sometimes via evaluation of statistical data. This listing of topics is not without objections, and the topics may not be mutually exclusive, however this listing was helpful in structuring prior research. In this paper, the

motives for forming alliances are focused upon, and also the way in which examples are used, and misused, by scholars.

2.1.1. Motives

The discussion of motives for the formation of alliances was initiated by Fusfeld [14] who highlighted the *competition limiting* effects of horizontal alliances. The discussion was broadened by West [15], who identified other reasons such as *diversification, government pressure* in overseas operations and *pooling of resources*, such as capital and know-how. Gullander [16] studied a more diverse sample of cooperative agreements in the manufacturing industry in Europe. He found a broader range of motives behind them and added: the creation of a balanced set of *skills among managers*, the establishment of collaborative frameworks for *managing interdependencies* with suppliers, customers and competitors, and finally *diversification.* Alliances are found in most industries, but some industries are more prone to forming alliances than others. Companies in industries such as the computer, telecommunications, automobile, and pharmaceutical industries [11] as well as the petrochemical industry [17] are proficient in alliance formation according to earlier research.

A recent example of cooperative agreement is the formation of alliances in the automotive industry between Japanese and non-Japanese producers. An example of this is the production joint venture in California between General Motors and Toyota "which is used to transfer manufacturing know-how" [1, p. 333]. Actually, it is not merely a matter of transferring manufacturing know-how, it is a matter of transferring the means of *change in mind-set.* As Jack Smith, GM's vice chairman, noted, the cooperation between GM and Toyota "was the first time we really had a clear understanding of how they ran [their operations] ... The data [on productivity] were just unbelievable" [18]. Thus, the revelation of lean production led to a shift in GM's perception of production that would have been much harder to come by without the alliance. GM was allowed to obtain a truly inside view of the new production paradigm.

Porter and Fuller [1] summarise the strategic benefits of cooperative agreements in four categories, *economies of scale or learning, risk reduction,* or spreading of risks, *access to knowledge,* for instance, gaining local knowledge, and *shaping competition.* Schuler et al. [47] presents an excellent review of the most common reasons for the formation of international joint ventures. The authors agree with Porter and Fuller's first three aspects and elaborate on the category "shaping competition", splitting it into: *improvement of competitive advantage,* "government restrictions, *cost effective and efficient responses* (forced by globalization of markets), *rapid market entry, obtaining vital resources* (such as raw materials or technology). Several other authors subscribe to the importance of one or several of these categories (cf. [3, 19–21]).

2.1.2. Examples

The persistent reader of articles on alliances will note that success stories are abundant. However, a longitudinal study of the literature reveals that examples used to point out the advantages of alliance formation in one article may well serve as a warning in the next. Perlmutter and Heenan [22, p. 146] use the Renault-AMC alliance as an example of an arrangement with well functioning governance, one of six success factors discussed in the article. Two years later Devlin and Bleackley [2] used the same alliance as an example to illustrate what happens if an alliance is viewed as an "opportunistic 'quick fix'." "Renault invested $645 m in AMC which nevertheless managed to incur losses of $750 m over the period of the agreement. Such investment severely weakened Renault at a time when it was also facing problems in domestic markets" [2, p. 18].

The literature presents numerous examples of successful alliances and uses the examples as a reassurance of the advantages of alliances. However, the companies are rarely discussed and when they are, the discussion is restricted to a minimum, not granting the reader the opportunity to relate his or her own business to the success stories told. Without a deeper knowledge of the companies, the prerequisites of the industries in which they operate, and other factors relevant to the example company, it may be dangerous to generalise these conclusions and apply them directly to other cases.

2.2. Conclusions from previous research

The majority of authors are pro-alliances and are overconfident in the superiority of alliances [12]. It is a popular belief that the number of coalitions is increasing due to the perceived hardening of competition. The fact that the forming of alliances is increasing is passed on from author to author. Anderson [13, p. 19] states, *without any references*, that "more joint ventures and cooperative arrangements have been announced since 1981 than in all previous years." This statement is then considered as fact by other authors (e.g. [23]).

"There is generally no 'one best way' to organise [an alliance] or the one 'best' organisational structure" [21]. Listings of general motives for the formation of alliances will therefore be of limited use for scholars as well as practitioners. For the practitioner, a disclosure of a real case is probably more useful than a listing of statistical evidence of the superiority of alliances for the average firm. The habit of using examples to illustrate alliances and to prove a point, without at least a limited description of the company, industry and other facts relevant to the case, can lead the reader astray. This implies that a case study would allow the reader to gain a deeper understanding of the strategic prerequisites, and the relationship between the prerequisites and alliance success. It can also prevent practitioners from jumping to conclusions based on examples of minor relevance to their industry. The majority of case studies presented in the strategic alliance literature illustrate successful alliances (e.g. [24, 25]). Encountering only successful cases may lull the reader into a false sense of security concerning the success of alliances [12]. In order to break this trend the case of Scania is presented, in which it is argued that part of Scania's unrelenting financial success may be based on their rejection of horizontal alliances.

3. The case of Scania

The case of Scania is advantageous since the products, heavy trucks, are well known to most people, as is the use of the trucks. This transparency of the truck industry facilitates the making of analogies with other industries, which may be favourable for researchers, but even more so for practitioners.

3.1. Data and method

The empirical data for the case of Scania, in the heavy truck industry, were prepared for one of nine studies forming the empirical basis for Expert Report No. 6 [26] of the Swedish Advisory Panel on Productivity. Scania was selected as a "best practise company" in the global arena for an in-depth study. Porter's frameworks [27–30] for analysing competitive factors relating to companies, industries and countries were used as a theoretical foundation for the study. They were supplemented by other frameworks, such as Lawrence and Dyer's [31] theory of organisational adaptation and re-adaptation, applying an organisational-theory-based perspective, rather than Porter's corporate strategy. Kaizen [32] or continuous improvements, an integral part of "Japanese production-philosophy", have also had a major impact on the study's theoretical frame of reference. The research was conducted under the Royal Swedish Academy of Engineering Sciences (IVA), which provided direct channels for information, from within companies, that would otherwise not have been obtainable due to company restrictions.

It is not possible to draw general conclusions from a single case, the primary benefit of the cases study is as an illustration. However, by making distinctions of the case in relevant dimensions, future case studies can relate their findings to this case and draw more general conclusions based on the case of Scania and several other cases. Three relevant dimensions for the specification of cases are: type of *customer*; industrial or consumer, type of *product*; goods or service, and *life cycle phase* of the product; introduction, growth, maturity or decline (cf. [33, p. 57]). The case of Scania concerns: industrial customers, goods and the mature phase in the product life cycle. The case is presented according to the three levels of analysis: nation, industry and company.

3.2. National factors

Companies act in accordance with the rules laid down for enterprises in a country. The rules are created primarily as an effect of the country's characteristics: its specialised assets and skills [30]. It is therefore not surprising to see that competitive companies in an industry are not evenly distributed across the globe, but are rather concentrated within one nation.

Sweden has been endowed with the prerequisites for forestry and mining. Forest product and resource-based metal industries have consequently developed to become two of the most predominant industries in Sweden. This has, in turn, created a demand for the transportation of raw materials from the mines and forests to the mills. The mills have, in the course of time, evolved into larger units with an increased reception area for raw material. Mining is conducted at the same location for an extended period of time. This, plus the fact that ore is very heavy, has made railroad transportation the most feasible way of transporting ore. In forestry, however, the reception area is geographically larger and constantly changing. This creates a demand for more flexible ways of collecting the raw materials and trucks best meet that demand. In the case of Scania, the fact that Scania is a Swedish company has been of major importance.

The size of the *home market demand* proves to be less important than the character of the home market demand [30]. Further investigation of the character of the home market demand, reveals that it has also had a substantial impact on the evolution of Scania. Sweden is a tough environment for truck producers. The country is narrow and long and lies partially inside the Arctic circle, and has a *severe climate*. This has put extra demands on the producers and has forced them to increase the quality of their vehicles.

Legislation concerning transportation has been liberal in Sweden, permitting trucks to pull wider, longer, higher, and heavier loads than in any other country in Europe. The global definition of a heavy truck is, today, $\geqslant 16$ metric tons gross vehicle weight. The maximum allowance in Sweden is over 50 tons. This has not always been the case. Technology has put limits on the load that trucks can carry, and allowances on the roads have not always been as generous as today. However, Swedish legislation has gradually increased the allowances, thus giving the producers the opportunity to produce sturdier and more durable trucks due to the demand created by increased allowances on the roads. This has been significant for Scania, especially since it has been Scania's policy to produce trucks in the heaviest segment according to current definitions. It is safe to say that *Swedish legislation in the transport sector and work environment* has helped to create the most demanding truck buyers in the world.

Last, but not least, on the national level, Scania has had a tough *competitor in the home market.* Almost one hundred years of continuous fierce competition with a powerful competitor, Volvo, has forced both companies to perform to their utmost abilities. This has sharpened the competitive strength of Scania as well as Volvo. The importance of the national factors for the heavy truck industry is indicated by the fact that Volvo, who has had the same prerequisities in this respect as Scania, is the second best performing company in the world.

Because of the factors discussed above, Swedish truck owners are among the toughest to satisfy in the world. Scania has been forced to produce advanced and durable trucks for the home market, which in turn has resulted in competitive advantage in export markets.

3.3. Industry factors

The potential for high returns in an industry is governed by the forces affecting the companies from inside and outside the industry. To define an industry in an indisputable way is difficult, if at all possible. However, if the analysis of the industry considers factors from both inside and outside the industry, the exactness of the definition of the industry's border looses some of its significance. It may be of minor importance if a factor is categorised as inside or outside the industry as long as it is analysed. In order to provide a relevant industry demarcation the global market situation has to be analysed.

The heavy truck industry can be divided into three distinctly different markets, North America, Europe and Japan. Outside the three major markets, other markets exists such as Australia, South America, Africa and Eastern Europe which, however, have a limited effect on the structure of the competition in the major markets.[1] Japan differs from the North American and European markets primarily in legislation; the size and capacity of trucks being limited. This has had profound consequences though, prohibiting Japanese producers from building and testing trucks in the heaviest range in their home market. As a consequence, Japanese exports of heavy trucks is very limited and Japanese heavy truck producers have virtually no chance of repeating the export success of the Japanese auto industry.

The European and North American markets are open to trucks of similar size but have a fundamentally different product and production concept. In the USA, companies on the supplier side are substantially more powerful than their European counterparts. The North American suppliers have gained ground in the value system[2] at the expense of the truck producers. The American truck producers are basically truck assemblers who allow the customer to decide which brand of engine, gearbox, etc. to install in the truck. In the European market, on the other hand, the heavy truck producers have retained greater control of product development and production of the main parts of the power train,[3] which are regarded as *the* strategic parts of the truck. In Europe, trucks can thus be optimised as a system instead of optimisation of individual components. As a result, no American trucks are sold in Europe, and practically no European trucks are sold in North America.

It is thus not relevant to apply an industry analysis to the global market for heavy trucks, but the unit of analysis should be the European market which, from an analytical point of view, is regarded as an industry. Further analysis is limited to the European market using Porter's [27] five forces framework, analysing the prime determinants of the potential for high returns.

Porter defines five forces that are the prime determinants for the potential for high returns for companies within an industry. In the truck industry, the external forces are at present weak. The industry structure of the European heavy truck industry is characterised by strong truck producers who produce many of the strategic parts in-house, and several suppliers are competing with each other and suppliers can, with one exception,[4] be relatively easily changed. Also customers are weak. Even the largest customers buy only a small fraction of the production. Thus, neither the *suppliers* nor any of the *customers* are powerful enough to put pressure on the truck producers. The dynamics of the environment of the company can, however, change over time. If, for instance, the hauliers merge to form larger constellations, their bargaining power will increase. The European Community can have such an effect on the haulage industry in Europe and the truck industry will be affected accordingly. However, neither suppliers nor customers are at present strong enough to threaten the potential for high returns in the truck industry. Explanations as to why only a few of the truck producers can present adequate profits have thus to be sought elsewhere.

Substitution is presently no threat either, since the different means of transportation have their well defined sphere of operation. The power of substitutes may however change too, due to innovations in, for instance, railroad cargo handling, or environmental issues could become a strong force in the truck industry. For *potential entrants* into the truck industry, the entry barriers are exceedingly high. It is extremely expensive to build a network of service stations throughout the continent. It can be concluded that neither substitution

[1] The South American market is, however, a very important market for Scania as a company.

[2] The vertically interconnected value chains of several companies [28].

[3] The power train consists of engine, gearbox and transmission, all connected by a universal drive joint assembly.

[4] Bosch supplies most of the industry with, for instace, high-performance fuel injection systems, without any real competition. Bosch has been building this position since the 1930's [34].

nor novel entrants pose a real threat to the heavy truck industry at present.

The fifth and final force, *rivalry in the industry*, is the most powerful force in the truck industry. During the last 20 yr the number of producers has been reduced from over 40 to less than 20. Many of the remaining companies have, moreover, merged into larger strategic alliances. This can, in turn, partly be explained by the volatility of the truck market. Low mark production may well be half of the peak production. The volatility puts a strain on all companies in the industry. Smaller companies, as a rule, are often taken over by financially stronger competitors. One explanation of this concentration is the search for economies of scale among the truck producers. Other motives can be a finer service net and increased market in regions where the buying company is not well represented.

The search for economies of scale has also driven companies of equal strength to form strategic alliances. One important objective of this is to gain cost advantages. The advantages can appear anywhere in the value chain from supply related activities, via product development and production, to after sales service. Other motives can be to create a more consistent line of products than is possible for each company on its own. A merger between Scania and Volvo was discussed several years ago in order to create an even stronger company in the international arena. Fortunately, as it is assessed today, the plans were never realised. As a matter of fact, the advantage of strategic alliances in the truck industry still remains to be proven. So far, the increase in profits, which was the original reason for forming the alliances, has not been seen in most cases [35].

In the international arena, the heavy truck industry is crowded with alliances and other cooperative agreements, both horizontally and vertically. In Fig. 1, the heavy truck producers are arranged in one column for each major market. At the bottom, external suppliers of strategic parts are grouped. While the figure is focused on horizontal relations, important supplier relations are also indicated.

Fig. 1 illustrates that nearly all heavy truck producers are engaged in alliances, horizontally with competitors and vertically with major suppliers of strategic parts. One exception to the rule of forming strategic alliances is Scania, who has, so far, avoided to take part in any horizontal collaboration.[5] For producers such as Mercedes, RVI and Volvo, who have all bought American truck companies, no synergistic effects appear to be gained by being represented on both sides of the Atlantic. The commonly acknowledged positive effects of increased market share does not appear to accumulate over the three different regions in the heavy truck industry. Neither market structure, industry structure, production concept nor products are transferable between the regions, factors which are all strong indicators of the lack of synergies between the regions.

3.4. Company factors

In the 1940's, the managing director, Carl Bertel Nathhorst, laid out the strategic direction for Scania, aimed at high returns:

- Focus on the heavy segment of trucks.
- Build trucks from a modular component system.
- Develop and produce the strategically important parts of the truck in-house.
- Work in close cooperation with the suppliers and focus on export in order to gain volume.

Scania has lived by this strategy the last 50 yr and has thus been able to form cost-efficient production and obtain a price premium on its products through differentiation in the market.

3.4.1. Focus

Scania's strategy of focusing exclusively on the heavy segment has meant that Scania cannot

[5]Except when absolutely necessary, as after the end of the Second World War in 1945, when the post-war range of vehicles and engines (that had been developed with unprecedented speed) began to reveal a considerable number of defects, due to unproved new materials and insufficient time for testing. Scania therefore concluded a working agreement with Leyland Motors Ltd (at that time one of Europe's leading producers of diesel engines, trucks and buses). The agreement made it possible for Scania to reduce the lead that their competitors had gained as a result of problems at Scania, and furthermore to "jump-shift" from their own precombustion-chamber diesels to the new direct-injection engine [34, 38].

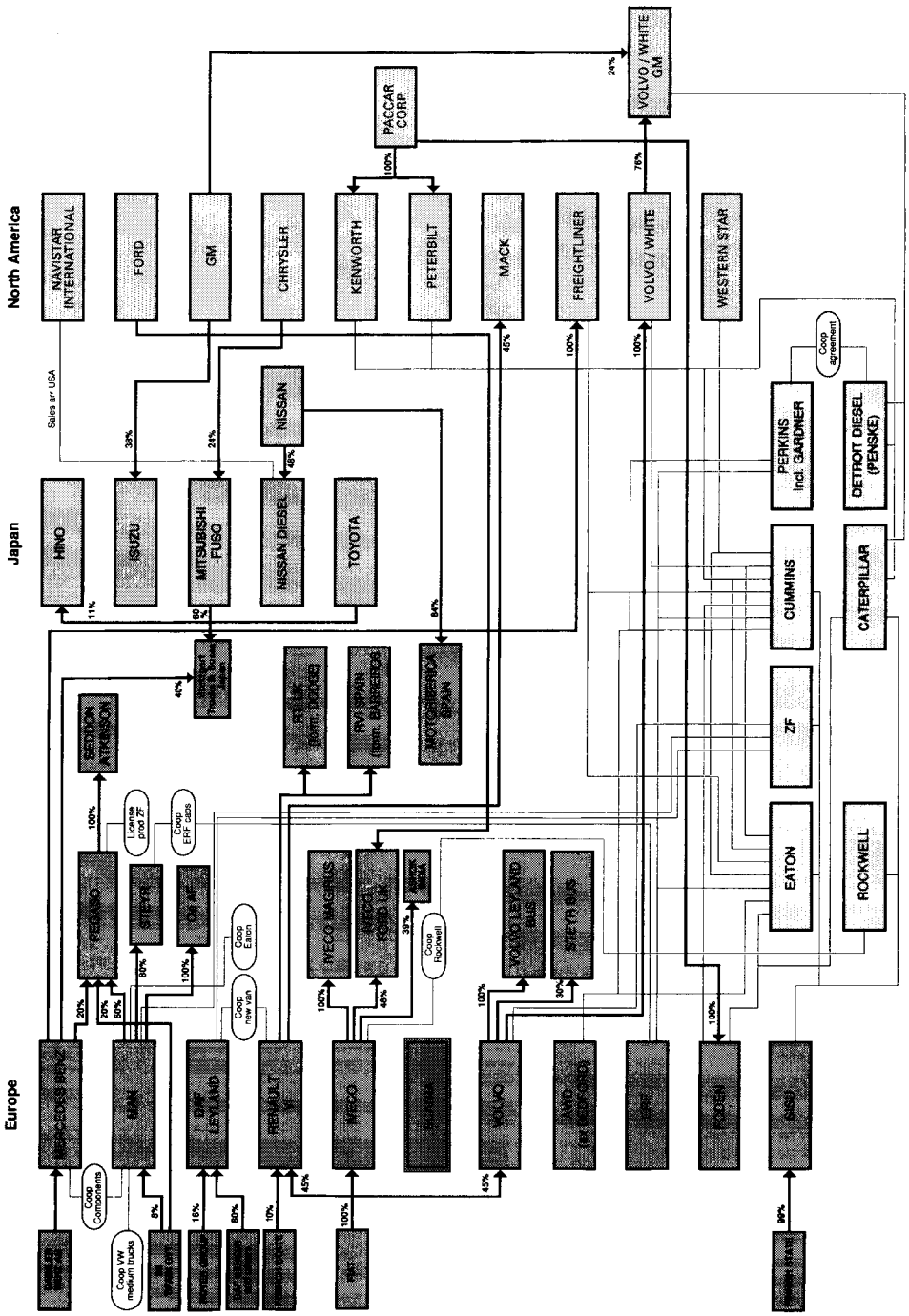

Fig. 1. Strategic alliances in the truck industry [36].

present a complete program of trucks. Other producers, for instance Mercedes, present a complete line ranging from light trucks via medium to heavy trucks. The completeness of their product lines is considered to be an important and valuable part of their strategy [37]. The advantages of a complete line of products can theoretically arise from the possibility of gaining economies of scale or sliding down the experience curve to reduce costs. Experience and scale economies can be found on the input side, in the transformation process of the company, or on the output side.

Economies of scale on the input side can be achieved primarily through a lower price from the suppliers due to their economies of scale. Also, the experience curve can induce a lower price from the suppliers due to their increased experience from supplying more. However, the suppliers can achieve both these price reducing effects by supplying to more than one truck producer too, as for instance Bosch does. As a matter of fact, this is the strategy used by suppliers in order to survive. Thus, on the input side, a wider product range would not give Scania any substantial advantages, from economies of scale, or from the experience curve.

In the transformation process, one could expect advantages of scale and experience to originate primarily in product development and production. However, trucks of different size have few components in common. None of the major parts, regarding performance as well as cost, are common to any great extent to trucks of different sizes. The construction of the truck as a function of size is fundamentally different. It is not, as could perhaps be expected, just a matter of scaling a construction up or down. Not even a modular component structure would help, since also at the component and item levels, most parts are not interchangeable between heavy trucks and other trucks. The products cannot even be efficiently produced on the same production lines due to the differences in complexity and size. The same rigs cannot be used and the lead-time in production differs substantially due to size. Hence the advantages of a wider range of products are dwarfed by disadvantages in product development as well as in production.

On the output side, advantages of scale and experience are possible in the truck industry. Buildings, staff and other resources could be shared by the total sales organisation. A greater variety of products for the customer is also usually an advantage for the producer. However, the lack of these possible advantages is not perceived as a major disadvantage by the sales organisation of Scania. Focusing on the heavy segment furthermore makes the marketing process less complex.

All competitors in the heavy segment produce a wider range of trucks than Scania. In the case of horizontal collaboration between Scania and another producer, Scania may indirectly be convinced to abandon its focus on the heavy segment. "Having coalition partners may make it difficult to pursue a concentrated configuration". [1, p. 339] Hence, the focus on the heavy segment may have been made possible for Scania by not collaborating horizontally.

3.4.2. Modular production

Scania's manufacturing strategy is based on standardisation through a modularised component structure. This has been, and still is, of paramount importance for its high profits. With item standardisation and modularised production, the number of components required to produce the different models of trucks is significantly reduced, especially since the standardisation extends from the bottom to the top of the product structure, and across the different models. A heavy truck from Scania consists of about 8000 items. Trucks from other producers consist of roughly 12 000 items. For its complete range of trucks Scania uses around 20 000 items while the equivalent for most competitors is more than 30 000 items. This has a number of direct and indirect effects on production. Firstly, the economies of scale are affected positively. When a company introduces modularised production, the volume of the individual components increases although the number of finished products is constant. This gives economies of scale on the item level, which is where scale is of importance. The effect on the experience curve is analogous. Other positive effects will occur indirectly, such as reduction in the stock level due to the reduction in the number of different items in stock. Further effects are a reduction in capital tied up in stock and a reduction in costs related to the handling of the

material, for instance, the cost of storage facilities and staff.

A prerequisite for the modularisation of the entire truck has been that Scania has refused to take part in any collaboration with competitors on the horizontal level. It is very difficult, time consuming and costly to fuse together the product lines of two organisations. The desired advantages of scale will not appear until most of the truck parts are used by both companies. Traditionally, there is also a powerful conserving force in organisations to use the company's own parts instead of parts from the horizontally collaborating organisation. Volvo encountered this problem in relation to RVI, Renaults truck producer (while their alliance lasted).

3.4.3. In-housing of strategic parts

The key components of the truck are found in the power train. The other parts, frame and cab, are also important but not as complicated and costly as the power train. Two basic manufacturing strategies are used, concerning the power train, by truck producers worldwide. At the one extreme, the American truck producers are assemblers more than producers. This is due to the American customer's preference of being able to specify their truck in detail, down to the component level. Hence, engines and gearboxes are produced by independent producers and assembled by the truck producer into their truck. The rest of the components thus have to be compatible with several different combinations of drive trains, rendering it hard and costly to produce an optimal system. At the other extreme, the Swedish producers Scania and Volvo produce optimal systems by developing and producing the strategic parts in-house. By doing this, the product development process becomes a continuous process within the company without external interference. This requires a strategy without horizontal collaborations. The process is therefore easier, since all contacts are within the company, and faster, since no consideration has to be taken of products other than their own. The diffusion of knowledge to competing companies is also slower than the case with collaborating parties. This keeps the competitive advantages within the company for a longer period of time.

3.4.4. Cooperation with suppliers and export

"Today manufacturing focus means learning how to not make things - how not to make the parts that divert a company from cultivating its skills, parts its suppliers could make more efficiently" [39. p. 98]. The approach is based on a simple principle: focus on the components critical to the performance of the product in the market. The company has to be distinctively good at making those components. Outsource the other components, "where suppliers have a distinct comparative advantage" [39, p. 98].

Scania works closely with its suppliers. The structure of Scania's supply network is gradually changing towards fewer and larger suppliers. These suppliers are, in turn, contracting sub-suppliers and deliver assembled parts or systems to Scania. *Scania is thus producing the strategic parts themselves and allows the suppliers to supply other parts.* Cooperation between Scania and its suppliers is becoming more intense since the suppliers are fewer, but each one is more important. Product development, for instance, was earlier carried out by Scania, but this responsibility is now gradually being transferred to the suppliers. The relationship between Scania and its suppliers is changing, becoming deeper and more long term. Scania thus collaborates vertically but not horizontally.

Export has been a prerequisite for Scania's development. Sweden has a population and industry with a volume that is much too small to supply Scania with customers. It has thus been of paramount importance for Scania to be able to export a large share of their products. Today, Scania's global production of heavy trucks is more than five times the size of the total Swedish market for heavy trucks and 97% of Scania's global production is sold outside the Swedish market.

3.5. Conclusions from the case

Scania's horizontal go it alone strategy is the opposite of alliance strategies, and rests on a few critical prerequisites, or strategy enhancers, which are mentioned under the heading Company Factors. Focus, modular production, in-housing, supplier relations and export are the most important

enhancers supporting Scania's perspective on competitive advantage in the truck industry. The strategy enhancers interact and subsequently affect each other mutually.

The *focus* on the heavy truck segment together with modular production induces economies of scale and facilitates the utilisation of the learning curve primarily in product development and production. The end result of this is primarily a lower cost for the truck. The close cooperation with the *suppliers*, giving suppliers more responsibility for, for instance, product development, provides a time-based advantage. *In-housing* of the strategic parts also provides the company with a time-based advantage, which is especially important in the product development stage. As opposed to the case of strategic alliances, all contacts are within the company and consideration does not have to be taken of other companies' products or processes. This induces lower transaction costs and time savings. The diffusion of knowledge to competing companies is also slower, thus retaining the competitive advantages within the company for a longer period of time. Together with *modular production*, in-housing allows for differentiation of the products based on the time aspect. The value of the advantage of the differentiation is higher for a single company due to the fact that a smaller portion of the total market is differentiated.

Modular production and focus on the heavy segment provides the means of building a streamlined manufacturing system with the ability of a flexible response to the variations in the market demand. Modular production and the decision of making the strategic part in-house and outsource components that cannot be used for differentiating the product, are indicators of manufacturing flexibility within the company and a strategic flexibility in relation to the suppliers.

4. Strategic implications

Three strategically important issues that are related to a company's choice to join a strategic alliance or not are elaborated on time-based advantages, economies of scale and different aspects of flexibility.

4.1. Time-based advantages

The prerequisites for businesses are constantly changing. Furthermore, the dynamics of the companies' environment is increasing. Product life cycles are becoming shorter and new products are superseding each other at an increasingly rapid pace [40, p. 76]. One could go so far as to claim that competition is a matter of getting there first. Although this is an oversimplification of the arsenal of competitive factors, it underlines the significance of time. Time is becoming increasingly important in the business environment as a strategic tool. "... these days, the penalty for standing still is far higher than the cost of change" [41, p. 110].

The traditional rationale for mergers and acquisitions and strategic alliances is that it is a faster way of gaining resources, than developing them in-house. However, with a "go-it-alone strategy", the decision making takes place within a single company. This ensures that no unnecessary delay will occur due to split decision making, which can be the case with strategic alliances. "... communications are often slack; and joint decision making takes too long" [42, p. 80]. "The fact of shared ownership complicates management and control significantly as compared with more conventional forms of ownership, and confers no special advantages not enjoyed by the latter [9, p. 16]. It may be true that initially strategic alliances or mergers and acquisitions may be faster than developing the resources in-house, however, over the long run it may be more difficult, time consuming and also more expensive to develop and utilise these resources in a relationship with another company, than within a single organisation.

In industrial management, concepts and strategies based on time have evolved, for instance, Just In Time (JIT). In its broader sense, the goal of JIT is to continually try to come as close as possible to the concept of ideal production [43]. As noticed earlier by production managers, the notion of throughput time, the elapsed time from when material starts in a process until it leaves production, is influential in several respects. The concept of JIT was first applied at Toyota in the 1960s. The notion of time as a factor having high potential for the strategy of a company has since spread from production and

inventory managers to the other parts of the companies' value chain. Kotler, for instance, coins the term *turbo marketing*, indicating the importance of speed in the marketing process. Research and development is an area where the importance of time has also greatly increased. The product development process can be substantially reduced inducing the competitive advantage of being first mover.

Moreover, the total cost of a process is partly a function of the time it takes to perform that process. Rent, heating, depreciation, cost of capital, wages, etc. are all, at least partly, and definitely in the long run, costs which are proportional to the time of utilisation. Hence, nearly all processes in the value chain are a function of the time it takes to perform them. If, for instance, the speed of product development is increased, it will not only generate the possibility of differentiating the product by being the first mover, but the process will also prove to be less expensive. Thus, time reductions can often also generate cost reductions as a side-effect.

4.2. Economies of scale

In the literature, economies of scale often appear as a factor of great important for the formation of alliances. It is interesting to note that according to Mariti and Smiley's [44] study of 70 alliances, economies of scale are mentioned in only 16% of the cases as motivation for forming the alliance. Technological complementarity, the most mentioned factor, was mentioned in 41% of the cases. It is not possible to draw any general conclusion from this one study, but it appears that some scholars exaggerate the importance of scale economies in strategic alliances. Generally, the economies of scale are greater the more automated the production. For instance, the assembly of trucks is partly craft work, making the economies of scale level out at an annual production of around 10 000 units. The creation of a strategic alliance is thus not a necessarily an optimal solution. It is of major importance to consider the opportunity costs involved.

Economies of scale can also be achieved through internal development through growth or with a modular production system. Maintaining a consistent modularisation, while collaborating horizontally is harder than within a single company. In strategic alliances the advantages of scale will appear only in those processes where the companies have combined individual operations into one common operation, which takes care of the supply to all the companies of the alliance. Economies of scale can thus be used as a motive for the formation of alliances as well as a motive for not forming alliances.

4.3. Flexibility

Scania has by choosing to go it alone, been able to continuously improve one of the cornerstones of its strategy, a modular component system, which provides a flexible product structure. The modular component system can create economies of scale at the item level while simultaneously providing a wide array of end products for the customer. For horizontally collaborating partners, it is not possible to pursue this consistent product structure unless their products are totally integrated. However a total integration would also reduce the differentiating characteristics of each brand which would be a disadvantage in the market.

Strategic alliances are commonly acknowledged as means of achieving strategic flexibility, which involve inter-organisational collaboration [45]. A company can join into an alliance to acquire resources, for instance, knowledge, access to markets or production capacity. One argument can be that several potential partners exist, which increases the possibilities of finding "*the* right partner". However this flexibility may be decaying, since it is primarily in the initiation phase of the alliance that an array of possible partners will provide the flexibility of choice. Once a partner is selected, the flexibility of choice is consumed. Of course it is possible to change alliance partner, but this comes with a cost. Firstly the old relation has to be terminated which is costly, then the new one has to be build, which will also induce costs. Thus if partners are frequently changed, the switching costs may in the long run exceed the cost reductions that were the rationale for forming the alliances in the first place.

Avoiding horizontal alliances does not mean that the company cannot cooperate vertically. Scania has formed strong relations with its suppliers and thereby from a strategic perspective chosen which part of the product to produce in-house and which to outsource. Manufacturing flexibility is achieved primarily with the modular production system, while strategic flexibility is achieved with strong relations with the suppliers. The suppliers are furthermore becoming fewer and are to a greater extent supplying integrated systems as opposed to single parts. By choosing suppliers that are flexible themselves, the suppliers can evolve as the market situation changes, creating new demands on the suppliers. Hence external flexibility can be achieved by choosing the right suppliers and thus avoid the switching costs involved in changing supplier.

The issue of flexibility in relation to strategic alliances is thus not easily resolved. Alliances may flexible in some sense while go it alone may provide flexibility in different dimensions. Either way flexibility is gained in some dimensions while forsaken in others. What is important, and appears to get lost in the strategic alliance literature, is that alliances may actually reduce flexibility in some dimensions.

5. Conclusions

The process of forming a strategic alliance may turn out to be irreversible. The decision to enter into an alliance therefore requires utmost attention from senior management. The literature on strategic alliances is abundant and most authors are pro-alliances. A review of the literature indicates that broad and general descriptions and prescriptions are more common than specific case descriptions.

Therefore the case of Scania is presented, in order to provide a richer contextual framing. The case is chosen to complement the common pro-alliance picture, painted in the majority of the literature on strategic alliances. The novelty of this case, as opposed to the majority presented in the literature, is that it illustrates a company which has deliberately chosen *not* to form any horizontal alliances. The case of Scania thus illustrates the strategic advantages that can be achieved for a company that chooses a "go it alone strategy" instead of joining a strategic alliance.

The case is presented together with the prerequisites of the industry, and other relevant facts. Scania illustrates aspects of strategic alliances in the horizontal direction and partly also in the vertical direction. The case of Scania further concerns: industrial customers, goods (as opposed to services) and the mature phase in the product life cycle. This provides an opportunity for a practitioner to relate his or her company to the case and achieve a more nuanced picture of the advantages and disadvantages of strategic alliances as well as draw conclusions concerning the own company. These conclusions are more valuable than the generalised and thus partly diluted recommendations most often provided in the literature. For scholars the case of Scania can provide new insight to the research on strategic alliances due to the novel perspective. The question is raised whether forming a horizontal alliance is more or less flexible than going it alone. Generalisations are not possible to make and several more studies of the phenomenon of strategic alliances are needed. The primary benefit of this study is an illustration of primarily the possible negative effects of joining an alliance. However the study can also provide input to an extensive meta-analytical study of strategic alliances, using for instance the case-survey methodology (cf. [46]).

References

[1] Porter, M.E. and Fuller, M.B., 1986. Coalitions and global strategy, in: Porter, M.E. (Ed.) The competitive Advantage of Nation. The Free Press, New York.
[2] Devlin, G. and Bleackley, M., 1988. Strategic alliances – guidelines for success. Long Range Plann., 21(5): 18–23.
[3] Hamel, G., Doz, Y.L. and Prahalad, C.K., 1989. Collaborate with your competitors – and win. Har. Bus. Rev., January–February: 133–139.
[4] Lewis, J.D., 1990. Making strategic alliances work. Res. Technol. Mgmt., November–December: 12–15.
[5] Grunberg, L., 1981. Failed Multinational Ventures. Lexington books, Lexington, MA.
[6] Killing, J.P., 1983. Strategies for Joint Venture Success. Praeger, New York.
[7] Reynolds, J.I., 1984. The "Pinched shoe" effect of international joint ventures. Columbia J. World Bus., 19(2): 23–29.

[8] Porter, M.E., 1987. From competitive advantage to corporate strategy. Har. Bus. Rev., May–June: 43–59.
[9] Schaan, J.-L., 1988. How to control a joint venture even as a minority partner. J. General Mgmt., 14(1): 4–16.
[10] Shenkar, O. and Zeira, Y., 1987. Human resources in management of international joint ventures – directions for research. Acad. Mgmt Rev., 12(3): 546–557.
[11] Schillaci, C.E. 1987. Designing successful joint ventures. J. Bus. Strategy, 8: 59–63.
[12] Nilsson, C-H., 1995. Strategic alliances – optimistic fiction or negative fact, J. Eur. Bus. Education, 4(2): 18–46.
[13] Anderson, E., 1990. Two firms, one frontier – On assessing joint venture performance. Sloan Mgmt. Rev., Winter: 19–30.
[14] Fusfeld, D.R., 1958. Joint subsidiaries in the iron and steel industry. Am. Econom. Rev., 48: 578–587.
[15] West M.W. Jr., 1959. The jointly owned subsidiary. Har. Bus. Rev., July–August: 31–34; 165–172.
[16] Gullander, S., 1976. Joint ventures in Europe – determinants of entry. Int. Studies Mgmt. Organizations, 6: 85–111.
[17] Harrigan, K.R., 1986. Managing for Joint Venture Success. Lexington Books, New York.
[18] Keller, 1990. in: Womack, J.P., Jones, D.T. and Roos, D., 1990. The Machine that Changed the World. Macmillan, New York.
[19] Morris, D. and Hergert, M., 1987. Trends in international collaborative agreements. Columbia J. World Bus., 22(2): 15–21.
[20] Shenkar, O. and Zeira, Y., 1987b. International joint ventures – implications for organization development. Personnel Rev., Vol. 16(1): 30–37.
[21] Datta, D.K., 1988. International joint ventures – a framework for analysis. J. Gen. Mgmt., 14(2): 78–91.
[22] Perlmutter, H.V. and Heenan, D.A., 1986. Cooperate to compete globally. Har. Bus. Rev., March–April. 136–152.
[23] Geringer, J.M. and Hebert, L., 1991. Measuring performance of international joint ventures. J. Int. Bus. Studies, 22: 249–264.
[24] Hackney, H., 1991. Strategic alliances. Financial World, 160(22): 20–22.
[25] Haig, R.W., 1992. Building a strategic alliance – The Hermosillo experience as a Ford-Mazda proving ground. Columbia J. World Bus., 27(1): 60–74.
[26] Hörnell, E., 1992. Improving Productivity for Competitive Advantage – Lessons from the Best in the World. Pitman, London.
[27] Porter, M.E., 1980. Competitive Strategy – Techniques for Analyzing Industries and Competitors. The Free Press, New York.
[28] Porter, M.E., 1985. Competitive Advantage – Creating and Sustaining Superior Performance. The Free Press, New York.
[29] Porter, M.E. (ed.), 1986. Competition in global industries. Har. Bus. School Press, Boston.
[30] Porter, M.E., 1990. The Competitive Advantage of Nations. The Free Press, New York.
[31] Lawrence, P.R. and Dyer, D., 1983. Renewing American Industry. The Free Press, Macmillan, New York.
[32] Imai, M., 1986. Kaizen, The Key to Japan's Competitive Success. McGraw-Hill, New York.
[33] Vasconcellos e Sá J., 1988. The Impact of key success factors on company performance. Long Range Plann. 21(6): 56–64.
[34] Giertz, E., 1991. Människor i SCANIA under 100 år, (in Swedish) Norstedts, Stockholm.
[35] Nilsson, C.-H. and Dernroth, J., 1992. Bäst I Världen – En studie av lastbilsbranschen och två av dess aktörer, Scania och Iveco (in Swedish). Industrial Management, Lund Institute of Technology.
[36] Scania World Bulletin (1990) No. 4.
[37] Daimler Benz AG, Annual report 1985.
[38] Sandell, K. and Streiffert, B. (Eds.), 1990. Scania 100 Years. Saab-Scania AB, Södertälje.
[39] Venkatesan, R., 1992. Strategic sourcing – to make or not to make. Har. Bus. Rev., November–December, 98–107.
[40] Noori, H., 1990. Managing the Dynamics of New Technology. Prentice-Hall, Englewood Cliffs, NJ.
[41] Bower, J.L. and Hout, T.M., 1988. Fast-cycle capability for competitive power. Har. Bus. Rev., November–December: 110–118.
[42] Barrie, J.G., 1985. Alliance – The new strategic focus. Long Range Plann; 18(3): 76–81.
[43] Hall, R.W., 1983. Zero Inventories. Dow Jones – Irwing, Homewood, Ill.
[44] Mariti, P. and Smiley, R.H., 1983. Co-operative agreement and the organization of industry. J. Ind. Econom., 31: 437–451.
[45] Harrigan, K.R., 1985. Strategic Flexibility – A Management Guide for Changing Times. D.C. Heath and Company, Lexington, MA.
[46] Larsson, R., 1989. Organizational integration of mergers and acquisitions – a case survey of realization of synergy potentials. Ph.D. Thesis, Lund University Press, Sweden.
[47] Schuler et al., 1991. Formation of an International Joint Venture: Davidson Instrument Panel, Human Resource Planning, 14: 51–60.