

STRATEGIC ALLIANCE AND COMPETITIVE ADVANTAGE – AN EXPLORATORY STUDY IN BRAZILIAN FIRMS

ALIANÇA ESTRATÉGICA E VANTAGEM COMPETITIVA –
ESTUDO EXPLORATÓRIO EM EMPRESAS BRASILEIRAS

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Abstract

This work discusses the characteristics of strategic alliances that affect the obtainment of competitive advantages, according to the perception of managers who responded to the following question: can strategic alliances contribute to the obtainment of competitive advantages? It also demonstrates to companies of this type that do not participate in cooperative arrangements the benefits that they might receive from this relationship. This exploratory work was developed through a field survey based on the administration of a questionnaire to Information Technology companies. The questionnaire was constructed with two scales, one on competitive advantages and the other on strategic alliances. The survey was answered by 121 companies of various sizes, located in various Brazilian states. The data were analyzed through canonical correlation and the results showed that organization, commitment, focus on mutual gains and cooperation are the elements that favor competitive advantages, especially related to the enhancement of operational efficiency, enhancement of response power through agility and flexibility, pioneering potential, innovation and managerial capacity.

Keywords: Strategic Alliances – Brazilian States – IT.

Resumo

Este estudo discute as características das alianças estratégicas que afetam a obtenção de vantagens competitivas, de acordo com a percepção de gerentes que responderam à seguinte questão: as alianças estratégicas podem contribuir para a obtenção de vantagens competitivas? Também demonstra a empresas desse tipo que não participam de arranjos cooperativos os benefícios que elas poderiam conseguir com essa relação. Este estudo exploratório foi desenvolvido através de uma pesquisa de campo baseada na aplicação de um questionário a empresas de Tecnologia da Informação. O questionário foi elaborado com duas escalas, uma para vantagens competitivas e a outra para alianças estratégicas, e foi respondido por 121 empresas de vários tamanhos, localizadas em vários estados brasileiros. Os dados foram analisados através de correlação canônica e os resultados mostraram que organização, comprometimento, foco em ganhos mútuos e cooperação são os elementos que favorecem as vantagens competitivas, especialmente em relação ao aumento da eficiência operacional, aumento do poder de resposta através de agilidade e flexibilidade, potencial pioneiro, inovação e capacidade gerencial.

Palavras-chave: Alianças Estratégicas – Estados Brasileiros – TI.

Introduction

Strategic alliances emerge as a possibility for companies to rapidly incorporate the abilities necessary to compete. In addition, they are an important instrument for companies to consolidate their positions in the market in order to enter the added value communities that strengthen the business between companies and reduce intermediation with the objective of better servicing the client (MEANS; SCHNEIDER, 2001). The literature on competitive advantage indicates that the sources for its construction may arise from the component parts of the value chain (PORTER, 1996b), from the resources and abilities (BARNEY, 1991; COLLIS; MONTGOMERY, 1997; GRANT, 1991; TEECE et al., 1997), from the essential competencies (HAMEL; PRAHALAD, 1990, 1995) or from the position occupied in the market (PETERAF, 1993; PORTER, 1991). The reviewed literature suggests that alliances are potential sources for generation of advantages by providing flexibility, cost reduction for transactions, maintenance of the company focus on essential competencies, reduction in the need for verticalization and various other economies (GRANT, 2002; BARNEY, 2002; NALEBUFF; BRANDENBURGER, 1996, 1997; CHANDLER, 2002).

This survey studied the question of whether strategic alliances can contribute to the construction of competitive advantages, according to the perception of managers. It also sought to add support to Law 10.973 (this Law establishes incentive measures to innovation and scientific and technological research in the productive environment), sanctioned by the Federal Government on December 2nd 2004 (BRAZIL, 2004) as a way to enable and enhance technological autonomy in the country through, among other actions, encouraging strategic alliances and cooperative projects, and through the elucidation of variables related to alliances that would result in competitive advantages for companies.

Regarding alliances and innovation, it is pertinent to mention that, as for alliances, collaboration in management firms has been widely discussed, and a wealth of concepts is at hand. The origin of collaboration could be traced back to the emergence and promotion of management philosophy over the last two decades, when it is realized that competition no longer takes place between individual businesses. Collaboration can provide the competitive edge that enables all the business partners in the value chain to act as one in order to achieve synchronized and seamless value chain. Collaboration means improving the business relationship among the entire supply chain by increasing the intensity and scope of co-operative behavior between two or more independent decision-making units (XIE; JOHNSTON, 2004).

This work is structured as follows: the second part presents a theoretical review of competitive advantages and strategic alliances, which support the field survey. The third part presents the methodological procedures adopted in this study, whose data are discussed in the fourth part. Finally, the study's conclusions, its limitations and indications for future work are presented.

1 Theoretical framework

1.1 Competitive Advantages

An individual firm should attempt to protect, rather than share, valuable proprietary know-how to prevent knowledge spillovers, which could erode or eliminate its competitive advantage. On the other hand, an effective strategy from a relational view may be for firms to systematically share valuable, even proprietary know-how with alliance partners in return for access to the stock of valuable and proprietary knowledge which resides within its alliance partners. This strategy makes sense only when the probable value of the combined in-flows of knowledge from partners exceeds the expected loss/erosion of advantages

due to knowledge spillovers to competitors (DYER; SINGH, 1998).

Teece et al. (1997) differentiate the strategic models that emphasize the exploitation of market power: analysis of the industries and strategic conflict from those that emphasize internal efficiency – the Resource-based View – and the dynamic capacities, which the authors refer to as exogenous and endogenous perspectives, respectively, to explore factors related to the sources of competitive advantage and competitiveness of companies. These perspectives are utilized in this work with the aim of seeking an integrated vision for this analysis.

It is a good rule of thumb that in some cases the strategic firms can increase profits by extending their dependence on a smaller number of suppliers, thereby increasing the incentives of suppliers to share knowledge and make performance-enhancing investments in relation-specific assets. By committing to a small number of suppliers, the buyer firm can guarantee them greater ex post bargaining power and therefore greater ex ante incentives to make non-contractible investments in innovation, responsiveness, and information sharing; the buyer ends up being better off by keeping a smaller piece of a bigger pie (DYER; SINGH, 1998).

1.1.1 Exogenous perspectives

Ansoff (1990) proposes that the combination of analyzing the potentiality and competitiveness (evaluation of strengths and weaknesses in relation to competition in general administration research and development, operations and marketing and characteristics of the future competitive environment of the company) profile with the analysis of the potential of the strategic areas of the business (in the dimensions of product and market structure, growth and profitability, technology,

investments, marketing, competition and strategic perspective) would enable a forecast of the competitive position of the company as a whole and of its business in particular.

This exogenous perspective for the company departs from the focus of the occupation of privileged market positions (PORTER, 1991; PETERAF, 1993) and defines that the company's success is a function of two areas: the attractiveness of the industry and the position of the company in this industry (PORTER, 1991). In addition, this perspective arises from the structuralist paradigm, which joins structure, conduction and performance factors to support the concept of structural analysis of the industries.

Porter (1979, 1991, 1999) synthesizes this paradigm, arguing that companies need to find the best defense position against competitive forces – a) bargaining power of buyers, b) bargaining power of suppliers, c) the threat of substitute products, d) the threat of new entrants, and e) rivalry between existing competitors – that act to determine the final profitability in the industry.

Besanko (2004) argue that Porter's model contains limitations that involve the non-consideration of factors that affect the demand, the focus of the industry as a whole – instead of isolated companies – and the non-explicitness of the government's role, except when it is in the position of buyer or supplier. The authors determine more clearly how these forces act, defining as the model's principal factor analysis the possibility of erosion of the industry's profitability as a result of the movements between competitors and the pressures exerted by suppliers and clients.

The way of neutralizing these threats to profitability consists of defining the strategies related to cost or creation of advantages through differentiation, as well as observing the work in markets in which the forces are less severe,

or by trying to alter them (BESANKO, 2004; PORTER, 1991).

In this way, companies achieve an advantage when they increase efficiency (PORTER, 1996a), capitalize large-scale economies and work to be market leaders through low costs, or when they emphasize the exclusivity of their products/services, selling them at premium price, implementing a general orientation for differentiation and observing a competitive scope with more or less amplified targets. In this second case, the result is a focus on costs or on differentiation (PORTER, 1991).

A company will achieve sustainable advantages not by possessing or controlling resources that are unique or difficult to imitate, or by the impossibility of competitors to replicate them, but because these competitors would not have the incentive for such, either by economies in scale or scope, which would make the company's privileged position in the market the source of sustainable advantage (COOL, 2002). The emphasis of economists to explain competitive advantage is more on assuming that few production factors have non-elastic supplies than on recognizing resources as immobile or inimitable (BARNEY, 2002).

Another exogenous perspective, the strategic conflict, departs from game theory to analyze the competitive interaction between rival companies, based on the idea that companies may be inclined to increase their profits to manipulate the market environment because of managers' intellectual ability in playing (TEECE et al., 1997).

In analyzing business as a game, starting from game theory, proposed by John von Neumann and Oscar Morgenstern, Nalebuff and Brandenburger (1996, 1997) point out that some peculiarities become evident: not always are there winners and losers and there are no pre-established rules. In other words, action changes the game. Ghemawat (2000) affirms

that these games have a zero sum, by giving opportunities to competition and to cooperation, and can be structured either in a free way or based on rules.

Nalebuff and Brandenburger (1996, 1997) describe the game process, which has, in addition to players (competitors, complementers and the company), the value that each adds, the rules that structure the interaction between them, the influence through the perceptions or beliefs of the players and their scope or limits, and connections with other games.

A company must define a strategy for each relationship in the value network in order to determine who represents a complement or a competitor and discover what the market is not providing, thus being able to fit itself to the situation in three ways in order to establish the best relationship between profitability and lowest price for the consumer: working alone, forming an alliance for projects or forming a new business with a complementary company (NALEBUFF; BRANDENBURGER, 1996, 1997).

In synthesis, these approaches suggest that companies obtain sustainable competitive advantages when they implement strategies that exploit their power to respond to environmental opportunities, while they neutralize external threats and avoid internal weaknesses (BARNEY, 1991). They also gain such advantages when they ally choices between cost or differentiation advantages and between ample or narrow scopes of operations in the market (GRANT, 1991), as well as establish the best adjustment in the relationship in their networks to define the companies that are business complements or competitors.

1.1.2 Endogenous perspectives

The work of Wernerfelt (1984) is the one that established the first relationship between

profitability and resources, defining a form of evaluating the company's position in resources.

Its approach is different from traditional analysis in terms of product-market and the subsequent development of a theoretical focus on external aspects of the company, and attests that it is possible to establish barriers to resources. This would be relatively analogous to the entrance barriers described by Porter (1991) to characterize the Resource-based View, by which the type, magnitude and nature of the company's resources and capacities are important factors in its profitability (AMIT; SCHOEMAKER, 1993).

This view is close to the generic strategies of leadership in cost, differentiation or focus established by Porter (1991), but different in relation to the origin of profitability, which would happen more from the ownership of scarce resources than by the establishment of a market position (TEECE et al., 1997). The appropriation of resources would be given, as such, by the exploitation of the specific resources existing or controlled by the company (TEECE et al., 1997; AMIT; SCHOEMAKER, 1993; COLLIS, 1991).

According to the Resource-based View, specific resources would be determinant for competitive advantage and performance (WERNERFELT, 1984; PETERAF, 1993) and the rival companies would compete based on their resources and capacities (WERNERFELT, 1984; BARNEY, 1991; AMIT; SCHOEMAKER, 1993; COLLIS; MONTGOMERY, 1997; PETERAF; BERGEN, 2003).

Studies' evolution from the initial work of Wernerfelt (1984) attributed to the companies a heterogeneity in the control of strategic resources (BARNEY, 1991; TEECE et al., 1997; COOL, 2002), a fundamental aspect of the theory of resources (PETERAF, 1993), and proposed that these resources may be immobile between the companies, which would perpetuate this heterogeneity, premises opposed to those

established by the industry analysis model (BARNEY, 1991). The sustainable advantage would come from the competition's impossibility to duplicate the strategy (BARNEY, 1991) and the unique character of the resources (COOL, 2002).

The heterogeneity of the resources mentioned above would be a source to guarantee that the company has the advantage of being a first-mover (BARNEY, 1991). Being a first-mover does not imply being the first to make a product, but being the first to develop an integrated set of the functional capacities important to commercialize a new product in volume for the world markets (CHANDLER, 2002, p. 18-19) or to establish an expressive advantage over the competition, notably in functional activities put into practice before the other companies and related to production, distribution, purchase, research, financial area and general administration (CHANDLER, 2001).

Some characteristics qualify the resources according to different approaches in the theories. Collis and Montgomery (1997) define resources as tangible and intangible assets and organizational capacities.

For Barney (1991) and Amit and Schoemaker (1993), resources should have four attributes to have the potential to sustain an advantage. They must be: a) valuable by generating the ability to utilize opportunities and neutralize threats; b) rare; c) imperfectly imitated and d) irreplaceable.

Chandler (2002) defends learned capacities as sources of competitive strength for industrial companies and points out that the creation of these capacities is founded on the technical, functional and administrative knowledge that form a base of knowledge, which not only establishes the direction but also limits the course through the entrance barriers it creates.

Grant (1991), based on Hofer and Schendel, in *Strategic Formulation: Analytical Concepts*

(1978), assumes that resources are grouped into six categories – financial, physical, human, technological, organizational and reputational – which are considered strategic resources of the company when they are relevant to the conception and implementation of strategies (BARNEY, 1991). The challenge for the company is in identifying which are the strategic assets – or the set of resources that are difficult to imitate, rare, appropriated by the company and specialized – that are the basis of the construction of a competitive advantage, from the point of view of creation and protection of economic gains (AMIT; SCHOEMAKER, 1993) and maximization of income over time (Grant, 1991).

The capacities considered strategic compose the company's essential competencies, those that are the basis for the accumulation of abilities that assign to the company the capacity of rapidly adapting to market changes (HAMEL; PRAHALAD, 1990, 1995). The degree with which they become distinctive depends on how much they are specific to the company and on competitors' difficulty to replicate them (TEECE et al., 1997).

In defining capacity as being, given its nature, a set of routines, an aspect corroborated by Teece et al. (1997), who add that the routines make distinctive activities possible, Grant (1991) establishes a relationship between resources, capacities and competitive advantages, that consider: a) the company's ability to achieve cooperation and coordination in the teams as a central component of the relation between resources and capacities, an aspect reiterated by Amit and Schoemaker (1993); b) the compensations between efficiency and flexibility in view of the company's ability to articulate its capacities facing the tacit knowledge impregnated in its routines; and c) the economies resulting from the experience and the degree of complexity of the capacities (GRANT, 1991).

The result would be the construction of capacities that generate a high level of reliability in services, product innovations, flexibility in manufacturing, power to respond to market tendencies and shorter product development cycles (AMIT; SCHOEMAKER, 1993).

Amit and Schoemaker (1993) and Peteraf and Bergen (2003) consider that the resources perspective is complementary to industry analysis, even though Teece et al. (1997) point out that in some aspects they are also competitive and that the astuteness would be in resorting to a more appropriate focus in accord with the problem under analysis.

Grant (1991) counters the idea that only the existing resources should be considered. According to him, thinking about them strategically should consider not only the development of present resources, but also the development of the base of resources so as to amplify the company's competitive advantages and opportunities in order to sustain the advantages, even facing competition and the evolution of consumer requirements.

The duality between administering the current operational efficiency, while at the same time being committed to the creation of ruptures in the future, results in the transformation of the notion of present essential capacities into dynamic capacities, as the accumulation of strategic assets would not be sufficient to guarantee the maintenance of the advantage (TEECE et al., 1997).

Some characteristics would define the winning companies in this global market: response time, rapidity and flexibility in product innovation, associated with the managerial capacity to coordinate and reallocate internal and external competencies (TEECE et al., 1997).

The dynamic capacities are based on the managerial and organizational process, involve adaptation and change (HELFAT; PETERAF,

2003), and aim to integrate, coordinate, reconfigure and transform other resources and capacities. They enable the company to create and capture Schumpeterian gains (TEECE et al., 1997; Amit and Zott, 2001) or the gains that are received during the period between the introduced innovation and its diffusion (COLLIS; MONTGOMERY, 1997). Also, they may be seen as an emergent approach and potentially integrative for the understanding of new sources of competitive advantages (TEECE et al., 1997).

If Teece et al. (1997) advance by attributing a dynamic character to the concept of capacities defined by Resource-based Theory, in which dynamic capacities change non-dynamic capacities, Helfat and Peteraf (2003) go one step further by arguing that the heterogeneity proposed by that theory results in cycles in the creation of capacities. These authors set forth a dynamic resource-based view by defining the life cycle of the capacities so that they have a common language for their evolution.

The evolution of businesses and business environments over time provoked in the authors a revision of their initial views that seems to converge on the idea of integration of endogenous and exogenous variables in the company.

Ansoff et al. (1990) review their concept of strategic planning, advancing a more multidisciplinary model for strategic management that follows the same integration defended by Teece et al. (1997). Porter (1989, 1992) revises the theories on strategy proposing a dynamic theory that deals simultaneously with these variables, emphasizing the role of the environment as a provider of insight that: a) sustains the competitive advantage and b) provides the inputs that are necessary for action and accumulation of knowledge and abilities and the strengths that are necessary for continuity. He argues that a dynamic system is centered on parts that mutually strengthen each other: strategy-structure

of the company, rivalry, demand conditions, general and specialized production factor conditions, and support and other related industries.

Wernerfelt (1995) revisits the Resource-based View ten years after its implementation, concluding that many aspects of strategic management may be analyzed without reference to companies' heterogeneity, a central question in this theory. He also states that this is intrinsically related to the company's success and maintenance.

The revision started from the premise of integration between the theoretical models that emphasize market variables and those that give emphasis to the internal variables as a form or reinforcing the necessity for a broad view to analyze the companies in the current context of competition and business connectivity.

The company's flexibility and the agility that is necessary for resources allocation and recombination, characteristics of the dynamic capacities, would justify the formation of business alliances, an aspect present in the reviewed literature that suggests that alliances are potential sources for the generation of advantages by providing flexibility, transaction cost reduction, maintenance of the company's focus on essential competencies, reduction in the need for verticalization and various economies (GRANT, 2002; BARNEY, 2002; NALEBUFF; BRANDENBURGER, 1996, 1997; CHANDLER, 2002).

Of the other reviewed authors, only Porter (1989) opposed the pertinence of forming alliances as a way for the company to achieve advantages. For him, this is not a definitive solution exactly because it involves high coordination costs, creates other competitors, and reduces profitability. Porter (1989) argues that, on the contrary, the company loses competitive advantages when it shares abilities and assets that were strategic to construct these advantages. Therefore, this would not transform the company into a leader, but into something more

closely resembling mediocrity. This conflict of perceptions concerning the advantages and disadvantages of forming alliances to construct or lose competitive advantages justifies the discussion of strategic alliances that follows.

2 Strategic Alliances

Facing a globalized environment, companies need to create and sustain collaborations that provide them with competitive support (KANTER, 1994). This condition makes collaboration and cooperation contribute to the achievement of competitive advantages by complementing competencies or company resources (CLARKE-HILL et al., 2003), or by neutralizing problems of appropriation or duplication of efforts undertaken by different companies to develop the same thing (JORDE; TEECE, 1989).

Strategic alliances happen between various companies that cooperate without focusing on reduction in competition. They do not necessarily involve companies from the same industry and may occur not only in terms of a specific business area but also in terms of the corporation as a whole (BARNEY, 2002).

Doz and Hamel (1998) propose that the integration of tasks between companies requires a strong interaction between the parties, which is more easily obtained by an independent entity; that the uncertainties demand a set of contributions and benefits that is more achievable through equality in the agreements and a profit-sharing plan; and that the urgency in decision-making requires an autonomous management with the power to make key decisions without reporting to the allied companies.

Dussauge and Garrette (1999) establish that the key element for characterizing an alliance is the degree to which the involved companies remain independent, despite agreements that unite

them. Thus, companies should retain a certain degree of reversibility of strategic choices, the contributions must be reciprocated between the partners and a more balanced or egalitarian relationship should be developed. A company can, in principle, initiate collaboration before deciding to form an alliance and advance to where reversion would be possible.

For the authors, the theory of transaction costs contributes to a better understanding of the moment in which alliances occur, because the company will oscillate between avoiding operational costs with others in the market or internalizing the activities, in the event that the cost is less than foreseen with the contracts with other partner companies. Alliances would appear as an intermediate solution. In this view, an alliance would only serve to minimize costs.

Meanwhile, the true strategic alliance aims to create and develop the competitive position of the involved companies in a highly competitive environment. It is defined as strategic when it contributes significantly to the companies' strategies and also when it involves the junction and combination of the partners' capacities, as well as the sharing of competencies to expand and diversify the company's resources so that advantages are achieved, according to the Resource-based view (DUSSAUGE; GARRETTE, 1999).

The dynamic and competitive environment limits the company's autonomy. The company is at the mercy of a more onerous process to centralize all the activities that it needs to carry out, though it may have the ability to move forward with them or assume the risks and inherent costs of an acquisition. This makes the establishment of partnerships, which is an even more limited arrangement, promote the flexibility that is necessary for operating in this environment, while allowing the company to maintain its independence (KANTER, 1990, 1997).

As such, the strategy of cooperation provides the partners with a stronger position in the market, acting together, than they would achieve acting separately (DAI; KAUFFMAN, 2003).

Strategic alliances emerge from this scenario as a way for companies to join forces in order to take advantage of opportunities and avoid risks and uncertainties. They are groups of companies constituted in networks against other groups also thus formed. These formations may support the concept of business, expanding markets and distribution, providing opportunities for both formal and informal exchanges of personnel and ideas, enabling the sharing of scarce resources and creating the possibility for companies to achieve the premises of continuous innovations, global standards of quality, added value services and the ability to operate in cooperation so as to amplify the competencies of each company (KANTER, 1996).

The formation of alliances has as motivating factors two types of characteristics: environmental and organizational (ZAMAN; MAVONDO, 2001). Environmental characteristics are rapid changes in the environment caused by globalization (OHMAE, 1989), as well as uncertainties, the collapse of international commercial barriers, technology and large-scale economies (DEVLIN; BLEACKLEY, 1998; FORREST, 1990; HAGEDOORN; SCHAKENRAAD, 1994). The organizational characteristics consider the possibilities of focusing on the central abilities and competencies (OHMAE, 1989); on the increase of market force (HAMEL et al., 1989; SHAN, 1990); and on the organizational culture (NICHOLSON et al., 2001).

Kanter (1990, 1997) complements this view by admitting that the benefits of alliance fundamentally depend on its proposition, which may vary from a relationship with little superimposition and cooperation to relationships with more superimposition, apparently becoming the one that has the greatest potential

to offer long-lasting benefits to the participants.

In his analysis, Kanter (1997) identifies three categories of partnerships between these limits:

- 1- alliances of multi-organizational services (consortia between companies): companies in the same sector unite to establish a new organization, controlled by all. In this case there is little interdependence between partners and it is more difficult to obtain agreement on what would be best for all, which make them become entities with more difficult administration, and could result in loss of interest or commitment. The alliance between competitors is made viable to obtain large-scale gains through resources division.
- 2- opportune alliances (joint ventures): the opportunity to gain competitive advantage rapidly, though it may only be a temporary advantage, leads companies to seek alliances to develop enterprises, giving the partners speed in mobility towards their objectives. Large-scale gains, transference of technology, access to new markets, especially in more dynamic environments, learning and cooperation to access the market are also factors that motivate this formation.
- 3- alliances between those involved (suppliers, clients, and employees): driven by quality and innovation, they arise when similar investments by the involved parties are necessary to achieve complementarity in the business process of the companies, which are in different stages of the value-creation chain (Kanter, 1997, p. 122).

Kanter (1997) argues that this formation is only viable for large companies and points out that benefits such as flexibility and speed in access to new capacities, without the risk and the responsibilities inherent in the property of the business, make this formation viable for small companies to compete with large companies.

Johanson and Mattson (2001) handle the theme from the perspective of cooperative advantage, affirming that an alliance must be good not only for one of the partners but also for the collective performance of the alliance. The concept is also approached by Doz and Hamel (2000), when they state that it is very important to clarify what the strategic intention behind the formation of an alliance is so as to obtain success. The strategic framework must be present and clear when forming the alliance to increase the chances for success of the enterprise, and the strategic architecture must possess a good comprehension of the opportunities at the disposition of the company. The managers of these alliances must have in mind that value creation also needs to benefit the partner, which requires a much more ample view of the scope of its actions.

In this way, the alliance can be defined as a bilateral relationship characterized by the commitment of two or more partner companies to achieve a common goal, and in which there is a link for the partners to gather specialized assets and capacities (JORDE; TEECE, 1989; PYKA; WINDRUM, 2003).

Pyka and Windrum (2003) conclude this reasoning by stating that the goal of an alliance is also related to maintaining the focus of the company on its primary abilities and competencies, while from its relationship with other companies it acquires other components or capacities that could not be obtained in a more efficient manner, by exchanging of merchandise or fusions and acquisitions. They argue that the competitive advantage of the alliance depends on the degree in which complementary assets of the partners are efficiently aligned.

They further defend that alliances are the product of the interaction of heterogeneous companies and their operationalization does not depend on the understanding of this heterogeneity, but on the rules that guide the interaction between the companies. Also, it depends on to what extent the decisions to cooperate are influenced by the

cooperation present in the industry, and how interdependence in the decision-making process can be conducted to the convergence that is necessary for equilibrium, so that the alliances can prevail.

3 Methodological procedures

The problem encompassed by this study – Do strategic alliances contribute to the creation of competitive advantages? – associates the two analyzed variables, defined operationally in the following manner, in accord with the reviewed literature:

- 1- Independent variable (strategic alliances): organization, level of trust between the parties, independence and autonomy of the parties, degree of risk and existing conflicts, similarity between partners and mutual gains; commitment.
- 2- Dependent variables (competitive advantages): strengthening of the company through the establishment of the partnership, degree of efficiency in the use of resources, enhancement of management knowledge, agility, flexibility and potential for innovation, better utilization of information, large scale and large scope gains; degree of transference of capacities and imitability of resources; elevation and sharing of knowledge and establishment of position in the market.

This quantitative study was carried out with Information Technology companies (hardware, software, Internet services, integrators and networks, and consultants) that participate in alliances, independently of scale, financial composition or location in the national territory.

A total number of 1,513 companies, listed in *Guia de Compras Informática & Telecom 2005* (IDG, 2005), were contacted with the objective of obtaining information from those responsible

for strategic alliances, regardless of the positions they hold in the companies.

The collection instrument, in addition to information on company profiles and alliances, was composed of two Likert scales, with six response categories, developed from the theoretical review to gauge the impact of the alliance on the construction of competitive advantages. The scale for competitive advantages was composed of twenty-four assertions and the one for alliances, of twenty assertions.

All the questions were pre-codified and these codifications were integrated into the data file prepared to store the automatic responses, which were later treated with SPSS software.

The objective was to obtain at least 120 questionnaires with valid responses, as twenty-four assertions for competitive advantages were defined in order to meet what Hair Jr. et al. (2005, p. 98) defined: "... in preference the size of the sample should be greater or equal to 100. As a general rule, the minimum is to have at least five times more observations than the number of variables to be analyzed..."

A pre-test was made in order to assess validation, suitability of the content and understanding of the proposed questions. The pre-test was administered during personal interviews with seven companies compatible with the study's profile. This resulted in the alteration of some of the proposed questions and revision of the instructions for completing the form.

The questionnaire was sent to the respondents via a link in an electronic message, which explained the nature of the study. In order to validate the information, the respondents were required to complete a brief identification questionnaire with their names, the name of the company, the occupied position, e-mail, city and state.

During the entire study period, a personal, e-mail or telephone contact was made with all

the companies that needed more clarification, or wanted to confirm the provenance and honesty of the proposal.

Of the contacted companies, one hundred and thirty-six responded – 9% of the contacted companies – and 121 questionnaires were considered valid – 8% of the total.

In this study, just IT companies based in Brazil were chosen for the sample, since the authors are familiarized with its firms. In order to make a database, the authors decided not to mix other firm types.

4 Analysis and interpretation of results

4.1 Profile of respondents

The position of alliance manager, the necessary profile for the study, had the following distribution: technicians (0.85%), analysts/consultants (5.93%), consultants (2.54%), coordinators (1.69%), managers (26.27%), directors (50%), presidents (4.24%) and partners/owners (8.48%), who work in the following areas: administration (43.70%), Information Technology (11.76%), Marketing/Commercial/Business (31.94%), Alliances (6.72%), Engineering (1.68%), Human Resources (2.52%) and Finance (1.68%).

4.2 Profile of companies and alliances

Companies from 13 Brazilian States: AM (AMAPA), BA (BAHIA), CE (CEARA), ES (ESPIRITO SANTO), MG (MINAS GERAIS), MT (MATOGROSSO), PB (PARAIBA), PE (PERNAMBUCO), PR (PARANA), RJ (RIO DE JANEIRO), RS (RIO GRANDE DO SUL), SC (SANTA CATARINA) and SP (SAO PAULO) and the Federal District answered the questionnaire. Overall, 61.76% of them are located in the state of São Paulo, and their configurations are presented in Chart 1.

Chart 1 – Profile of the companies and alliances

Stock participation	82.7%: capital is 100% national; 3.3%: mixed capital; 14%: multinationals
Gross annual revenue	Up to R\$ 700 thousand – 39.7% From R\$ 700 thousand to R\$ 6.125 million – 32.2% From R\$ 6.125 million to R\$ 35 million – 15.7% Over R\$ 35 million – 12.4%
Activity sector(s) (more than one response allowed)	Commerce: 26.25; Industry: 8.1%; Services: 65.7%
Business areas (more than one response allowed)	Hardware: 12.1% Software: 28.7% Internet services: 16.2% Integrators and networks: 15% and Consultants: 28%
Business configuration	Exclusively in the physical environment: 10.8% In the physical environment and Internet participation: institutional site and/or corporate site (intranet and/or extranet): 59.2% In the physical environment and Internet participation: institutional site and/or corporate site (intranet and/or extranet) and electronic commerce: 25% Exclusively in the web environment: 5%
Type(s) of alliance in which the company participates (more than one response allowed)	Suppliers: 33.9% Clients: 25.5% Competition: 10% Complementary companies: 30.6%
Mode of strongest alliance	Suppliers: 39.2% Clients: 27.2% Competition: 2.4% Complementary companies: 31.3%
Configuration of established alliance	Consortium between companies in the same sector to establish a new organization: 9.4% Cooperation to develop enterprises (joint venture): 20.3% Seeking to improve business processes to complement those involved (suppliers/clients/employees): 70.3%
Time during which the strongest alliance has existed	Less than one year – 14% From 1 to 3 years – 34.7% More than 3 years – 51.2

Source: the authors

4.3 Canonical correlation

Canonical correlation quantifies the strength of the relationship between two sets of variables (dependent and independent), and from this association canonical functions are generated,

which are based on the correlation between two statistical canonical variables, one for dependent variables and the other for independent ones, called canonical pairs.

In terms of interpretation, 0.05 is the accepted

statistical level of significance. Another condition to observe is the existence of different signs, as the weighted variables of the same sign demonstrate a direct relationship, and different signs, an inverse relationship. The magnitude of the values is another aspect to be observed.

For this study, the original sets of variables (assertions

over competitive advantages and strategic alliances) were used, and the formation of 3 canonical pairs with descriptive levels (p) significantly different from zero was observed. The first canonical pair presented a correlation of 94.1%, the second presented a correlation of 77.6%, and the third, of 74.8%, as seen in Table 1.

Table 1 – Canonical correlation between the factors of competitive advantages and strategic alliances

Canonical Pairs	Autovalues	% Var.	% Accum.	Canonical Correlation	Square Root Can. Corr.
1	7.700	46.378	46.378	.941	.885
2	1.516	9.130	55.508	.776	.603
3	1.268	7.638	63.147	.748	.559
4	1.106	6.659	69.806	.725	.525
5	.997	6.005	75.811	.707	.499
6	.753	4.538	80.349	.655	.430
7	.714	4.300	84.649	.645	.417
8	.540	3.250	87.899	.592	.350
9	.501	3.020	90.919	.578	.334
10	.375	2.256	93.175	.522	.272
11	.338	2.035	95.210	.503	.253
12	.198	1.193	96.403	.407	.165
13	.156	.942	97.345	.368	.135
14	.143	.864	98.209	.354	.125
15	.120	.722	98.931	.327	.107
16	.077	.466	99.397	.268	.072
17	.043	.262	99.659	.204	.042
18	.032	.192	99.851	.176	.031
19	.019	.114	99.965	.137	.019
20	.006	.035	100.000	.076	.006

Source: the authors

Six canonical pairs represented more than 80% of the total variance, as demonstrated in Table 1. However, according to Table 2, only the first three were analyzed as they presented compatible significant levels (different from zero).

From the combination of pairs, we established the relationships between the respective assertions of competitive advantages and strategic alliances that presented the most representative percentages in the correlation

matrix, so that it was possible to identify, from the theoretical review, the elements of alliances that would affect the variables of advantages.

The relationships established between the assertions of competitive advantages and strategic alliances, from the combinations of the pairs, are demonstrated in Chart 2:

Chart 2 – Results of the Canonical Correlation through the combination of pairs

Pair 1	Advantages	Relationship
A	The company improved its potential for development of products and/or services	2
B	All technology applied to the alliance is used efficiently	2.4
C	The activities of the alliance are integrated efficiently	2.4
D	The alliance made the company become stronger in the market	2
E	The teams of the participating companies are well coordinated and act in a cohesive alliance	1.3
F	The alliance amplified the gain potential of the company with innovations	2
G	The alliance gave the company flexibility and speed to achieve capacities that accelerate obtaining gains	2
	Alliances	
1	The level of cooperation between the participating companies is high	
2	All the companies that participate in the alliance increased their potential for competition in the market	
3	The participating companies are committed to the results of the alliance	
4	The alliance is carefully monitored so it can be successful	
Pair 2	Advantages	
A	After the alliance the company could offer differentiated products	
B	The teams of the participating companies are well coordinated and act cohesively in the alliance	2
	Alliances	
1	The partners are very different from each other	
2	The level of cooperation between the participating companies is high	
3	After the alliance the company ran fewer risks	
4	It is not possible to fully rely on the people of the partner companies	
5	The company has a well-defined and solid participation in the alliance	
Pair 3	Advantages	
A	The obtained cost reduction gave the company a better positioning in the market	4
B	The cooperation and coordination of the alliance enhanced the agility of the company in the market	4
	Alliances	
1	After the alliance the company ran fewer risks	
2	The company has greater ability to serve clients than it did before the alliance	
3	The alliance does not interfere in the independence of the company	
4	The alliance prevented the company from making unnecessary expenses.	

Source: the authors

In pair number 1, it can be seen that alliance assertions 1 and 3, which deal with cooperation and commitment of the parties, respectively, favor obtaining the advantages related to enhancement of the coordination capacity (E). Assertion 2, which indicates the focus for mutual gains, presents a relation to six advantage assertions (A, B, C, D, F and G), which deal with operational efficiency, innovation, flexibility and agility, in such a way that it becomes implicit that the definition of a common objective strengthens the participating companies (Jorde and Teece, 1989; Pyka and Windrum, 2003). Assertion 4, which has as latent variables control of losses and organization, is related to the advantages (B and C) that are specific to operation and the company's potential to obtain first-mover advantages, to the possibility of establishing an expressive advantage over the competition, notably in functional activities put into practice ahead of other companies, and related to production, according to Chandler (2001).

The obtained results indicate that the theories on strategic alliances that deal with mutual gains (JOHANSON; MATTSON, 2001; KANTER, 1996), administrative organization (HAGEDOORN; SCHAKENRAAD, 1994), commitment (DAI; KAUFMANN, 2003) and cooperation (DAI; KAUFMANN, 2003; KANTER, 1996) for obtaining a stronger position without incurring losses (DAI; KAUFMANN, 2003) influence the competitive advantages related to enhancement of operational efficiency (PORTER, 1996a), enhancement of response power through agility and flexibility (GRANT, 1992; KANTER, 1990, 1997), pioneering potential (CHANDLER, 2001, 2002), innovatory potential (TEECE et al., 1997) and the elevation of barriers based on the managerial capacity to conduct business (CHANDLER, 2001, 2002; TEECE et al., 1997).

Although the other pairs (2 and 3) presented significant magnitude and level compatible with the analysis, by demonstrating a strong statistical relationship, they do not enable an

analysis from a practical point of view, given the limited relationships that were identified, according to Table 2.

5 Conclusion

Recent advances in inter-enterprise software and communication technologies, along with the trends towards globalization, networking, mass customization, and digitization in the context of the value chain, have led to the development of the alliances concept. Strategic alliances have been seen as a new way of doing business and a strategic weapon which could fundamentally change the traditional business relationships. However, as it emerged in the late 1990s, it is still relatively embryonic. There is a confusing assortment in both academic and practical areas of what strategic alliances really imply as a factor for competitive advantage in companies.

This study analyzed IT companies, identifying that strategic alliances may contribute to the construction of competitive advantages, and discussed in which aspects this may occur. The statistical technique that was utilized was canonical correlation and the results show that the factors related to organization and to the fundamentals of alliances are the most relevant to favor competitive advantages, according to the perception of the alliance managers of the analyzed companies.

The reviewed literature suggests that the formation of strategic alliances is a potential source for the generation of advantages by providing flexibility, reduction in transaction costs, maintenance of company focus on essential competencies, reduction in the need for verticalization and various other economies.

The final evaluation of this work leads to the consideration that the component elements of the alliances that most predispose the companies to obtain advantages are: focus on mutual gains, administrative organization, commitment and cooperation to obtain a stronger position without

incurring losses. These elements would impact more strongly on the construction of advantages related to the enhancement of operational efficiency, enhancement of flexibility and agility, the potential for achieving first-mover advantages, the potential for innovation and managerial capacity.

This study does not discuss the perceptions of the different positions, emphasizing the fact that the person acting as alliance manager did not necessarily occupy that specific position. In fact, only in a few companies did the respondent specifically occupy the position of alliance manager. This situation may have created a bias in terms of comprehension of the alliances from a more detailed point of view. Another factor was that the distribution of the sample elements was disproportional between companies of different sizes, which could also cause a bias in terms of the relevance attributed to the assertions of the scales.

5.1 Recommendations

A possible line of analysis would be to verify to what degree each one of the identified alliance elements contributes to enhance the potential to obtain the competitive advantages identified in the study. Another alternative would be to verify if the companies' reasons for constituting alliances are related specifically to exogenous advantages, endogenous advantages, or both, as treated in the theoretical review of this work.

Possible future research agenda may also include answers to the following questions:

- 1- How will inter-organizational alliances impact upon the group effort at the intra-organizational level?
- 2- How can a generic structural framework be developed in order to lead an organization to outline and execute alliances with different partners?
- 3- Therefore, what data architecture should be deployed to hold different fundamentals in implementing various types of firm alliances?

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