

Coopetition in Interpersonal Networks: A Theoretical Approach

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Abstract-

Society is organized into networks. The perspective of networks, then, is something that should be considered as inherent in social life, especially when observing the fact that it is not feasible (or even possible) for a given actor – whether a person or an organization – to live completely independent and isolated from others. These arrangements or network structures normally are approached in the literature on Administration from an organizational perspective and, therefore, may be formed in contexts that vary among competition, collaboration and a type of mixed relationship. In the latter, actors who normally compete with each other decide to collaborate in some way in order to reach some common goal; that is, there is collaboration among actors who interact in a competitive environment. The name given to this type of relationship among organizations is coopetition. The present study proposes that the exclusive adoption of this term and this type of relationship in the meso context be abandoned. To demonstrate that there is no sufficiently organized theoretical argument that will lead the researcher to believe that this approach must be associated exclusively to a meso context, the present study makes use of a bibliographic study about the concept in question. As previously presented, the goal is to show that the concept of coopetition may also be applied to the context of individual relationships.

Keywords- *Networking, coopetition, competition, resources, strategy*

I. INTRODUCTION

Society is organized into networks. From the simplest social arrangements to the most complex structures, people interact with each other in matrices of network relationships [49] in different dimensions. These networks may be composed of people or organizations; both cases are considered nodes of social interaction networks that connect through relationships [19]. The prospect of networks then, is something that should be considered as inherent in social life, especially when observing the fact that it is not feasible (or even possible) for a given actor – whether a person or an organization – to live completely independent and isolated from others, and in multiple instances. Everything and everyone are interconnected in some way [9].

In every single different aspect of life, there are one or several networks in which people find themselves inserted into interactive social relationships at multiple levels [40]. These social relationships are seen as dynamic, mainly in structural terms, where the links that are established among people may present different weights or strengths [32] and also directions, indicating power or influence.

At both the meso and micro levels [15] of network analysis, the relationships that are established among the actors constitute an important field for Administration, since their developments form the alterations that occur as much within the organizations as in the very environment of which these organizations are part. In the same way, relationships among individuals are affected and shaped by the dynamic relationship of the network.

These arrangements or network structures normally are approached in the literature on Administration from an organizational perspective and, in this way, may be formed in contexts that vary among competition, collaboration and a type of mixed relationship. In the latter, actors who normally compete with each other decide to collaborate in some way to reach some common goal; that is, there is collaboration among actors who interact in a competitive environment. The name given to this type of relationship among organizations is coopetition [11], [18], [23], [29], [41], [52], [61].

Coopetition gets attention because it is common and expected to see the pure relationships of competition or of collaboration in interpersonal relationships. This is because, after all, groups and, on a broader scale, organizations, have their origins in associations among individuals [16]. However, the third type of relationship – coopetition – is not explored when networks among individuals are observed. The present study intends to question the exclusivity of the application and the study of the concept of coopetition in the context of organizations, proposing that their use also be extended to the micro context, that is, individual relationships.

Taking into account the difficulty of identifying the limits that separate the micro, meso or macro levels [15], [53], [57], and also taking into account that the understanding of network structures is a type of response to this dichotomy between levels [32], [34], viewing the relationships among institutions in a different way from those established among individuals may represent a barrier to the advancement of the full understanding of the way in which social structures function.

The growing importance of networks of individuals who relate in an independent way, breaking down the boundaries of organizations [19] helps to reinforce the importance of the need to reverse the focus of the analysis of social relationships, now starting from the relationships among individuals and – along a continuum arriving at groups [16]. To observe the relationships among people, assigning to interpersonal relationships at this level of analysis their

proper importance, it will be possible to infer that in a particular industry or sector even organizations that do not relate directly, the presence of links among the individuals belonging to them may provide important indicators regarding influence and alignment.

The importance of the change of focus from the meso level to the micro level is also due to the difficulty stated above of establishing boundaries of the relationships among the organizations and the relationships among the individuals who are part of those organizations. While the networks formed by organizations form groups that are sometimes independent and unconnected with each other, the networks of individuals who belong to these organizations appear as uniformly distributed, dismantling the atomized structure of the networks of organizations [19].

Viewing network relationships in such a way as to separate the interpersonal relationships from the interorganizational relationships may, however, create problems for research into networks – especially regarding the relationships of cooperation. In this sense, the goal of this study is to demonstrate that the concept of cooperation can be applied to interpersonal relationships. For both, the deconstruction of the concept of cooperation was sought, in order to demonstrate that there is no conceptual justification for restricting its application to relationships among organizations.

The central point of the argument defending the concept of cooperation is that, after evaluating the operating possibilities of an organization, there will be times when allying themselves with competing organizations may be more advantageous – in different aspects – than simply competing directly with them [10], [11], [18], [23], [24], [30], [41], [45], [47], [51], [67].

To demonstrate that there is no sufficiently organized theoretical argument that will lead the researcher to believe that this approach must be associated exclusively to a meso context, the present study makes use of a bibliographic study about the concept in question. As previously shown, the goal is to demonstrate that the concept of cooperation may also be applied in the context of individual relationships.

A bibliographic study was done with the starting point being the concept of cooperation. To help in gathering the theoretical material published on the topic, the search tool *Google Scholar* was used. Publications with a greater number of citations were gathered and, from them, other publications on the topic were located and thoroughly studied in order to obtain a consistent panorama of what is published and what is claimed about the topic, and the definitions attributed by different authors about what cooperation and its characteristics are.

The goal of conducting this type of investigation for the present study was to identify the definitions of cooperation in order to discover the possible conceptual peculiarities of the theoretical construct and to reinforce the initial argument that what is claimed about this type of relationship, although initially associated with interorganizational relationships, may be applied at the micro level of interpersonal relationships.

II. COMPETITION, COLLABORATION AND COOPERATION

In the literature, organizations may relate with each other in three ways: competing for a scarce resource; collaborating to obtain benefits; and, from a mixed perspective in which the competitors collaborate in some aspect of their activity. Competition is a relationship of direct rivalry among the actors, which is established due to need or dependency on environmental structural conditions [11].

The relationships among competing actors are thus interactive processes, where the actions of one actor affect other components of the structure. -This is a process in which different actors hold divergent interests, which makes them behave in such a way as to meet their individual needs [52]. In this way, as the actors compete in search of a resource that cannot be fully obtained by all actors in the environment, the attainment of these resources by any given actor is at the expense of loss by the other actors.

Normally, therefore, competitive relationships are seen as being characteristics of a horizontal slice of a given environment, when the actors in the environment are not related within a hierarchical structure, fighting over the same resources and goals [1], [20], [55], [58].

In dealing with cooperative relationships, while it is easier to understand them when observing a vertical slice, that is, in situations in which the functions of the actors are complementary to each other, it is possible to establish cooperative relationships also in the horizontal slice. A broad definition of cooperation [27] shows this modality as being a strategic decision – which may be formalized or not – among two or more parties whose goal is the exchange or sharing of resources in order to obtain mutual benefits.

Keeping in mind that cooperative networks provide a favorable environment for learning and for innovation, it is expected that this type of relationship occurs independently of a hierarchical relationship among the actors involved, with the following factors being relevant to their preparation: access to solutions; scale and power of the market; learning and innovation; social relationships; and, cost reduction [63].

The conjunction of features that permits adaptation to a competitive environment in a unified framework and that standardizes the actions of the actors who compete with each other, but which permits these competitive gains, is the central idea for the establishment of cooperative networks [63]. This idea is reinforced when the fact is taken into consideration that actors acting cooperatively does not mean the absence of competition among them [43].

The major characteristic of cooperation is that it is constrained by well-defined projects and goals by those involved and shared by them. In this respect, it may occur among direct rivals [31]. The prevailing logic in the establishment of cooperative networks is based on, according to this principal, the possibility of gains for all involved parties [63]. Otherwise, these actors would not cooperate.

Cooperative systems are designed so that everyone involved benefits from the construction and sustaining of competitive advantage, combining their resources and expertise in the creation of value [47], or driving the emergence of

knowledge [7]. It is more common, therefore, that organizations approach network relationships with the goal of collaborating in arrangements constructed to meet different purposes, from collaboration to the search for a common resource, sharing of abilities for mutual benefit, or the regulation of a joint action among those involved. However, the appearance or formation of this type of arrangement among actors does not necessarily occur in a planned way; it may develop and keep going in a spontaneous way, as long as there is a relationship among those involved [3], [4].

These extremes of relationships competition and collaboration were frequently treated as the only possible forms of interaction in a network. Nevertheless, in recent decades, however, many organizational actors have been noticed to compete and cooperate simultaneously [64]. The relationships that emerge among actors who compete and cooperate with each other within the same relationship are paradoxical and reveal a third relational approach which constitutes a different way of looking at these relationships [11].

The name given to this third type of relationships is co-competition, and its concept comes from a study [18] that dealt with game theory and its relationship to the strategies of organizations. One of the key points of the argument of that study is that an approach to conducting the activities of an organization that is based solely on competition with other actors leads to heavy losses [18], [64].

When analyzed from the perspective of game theory, scenarios characterized by the predatory competitive action of the actors were considered to be loss-and-gain. Thus, to obtain a certain gain in a particular aspect of their action, an actor would give up potential gains that would be obtained if, in any sphere, they cooperated with those with whom they compete. From the mid-1990s, this view has given way to a conception of cooperative relationships that produce a win-win scenario [64], even considering the relationships among competitors.

Regarding these relationships among actors, there are studies that argue for the possibility of the existence of collaborative relationships among competitors in an indirect way [3], [4], [5], [6], [39], [42], [56] – not referring exactly to the term co-competition – and in a direct way [11], [18], [23], [28], [29], [41], [43], [46], [47], [52], [61], [64], still claiming that this is, in fact, a mode of collaboration wherein those involved act in such a way as to perpetuate the relationship, once they realize that if they proceed thus, they will obtain benefits.

The benefits obtained from the formation of collaborative or cooperative arrangements among competitors may be along the line of gaining competitive strength [2], [37], [43], [63]; accessing and sharing information, markets, resources and technologies [2], [13], [36], [62]; creating knowledge [7]; value [18]; learning [22]; transferring knowledge [45]; jointly developing technologies and innovation [2], [35], [36], [62]; succeeding in reaching goals [8], [51], [67]; increasing profits [56], [58]; collaboratively developing individual advantages for the actors involved [24]; and also, negotiating power [12].

Co-competitive relationships are formed with the goal of bringing benefits to those involved, and are considered to be an efficient way to deal with cooperation and competition among competitors [11] who share like characteristics and are, therefore, similar [24], in addition to having coinciding vision and goals [67].

It is evident from this that the arguments which aid in the construction of a concept of co-competition are confused with those present in the literature on collaboration and cooperation, specifically when the benefits of interorganizational collaboration and cooperation arrangements are argued about.

There is, then, the concept of co-competition that refers to the relationships of collaboration and cooperation established coincidentally between two actors who compete with each other. However, the co-competitive relationships extrapolate the definitions of collaboration, since they refer to fundamental, multiple issues for the actors involved, while collaborative relationships are directed to specific issues [30]. This is an approach – with growing adherence on the part of researchers [38] – to arrangements that merges the definitions of competition and cooperation [23], where it is possible to note the coinciding occurrence of competition and cooperation among actors in the same sector or industry, even in a highly competitive environment [41].

Although they will compete at some point in their relationship for one or more resources which may be limited, these actors arrange themselves into cooperative groups which intend to minimize competition and bring together forces competing for the limited resources, or even for gains which may not be measurable [8], [35], [51].

The actors involved in a co-competitive approach consider that, for their individual success, it is not necessary for the other actors to fail in the competition over a common goal [67]. Therefore, the relationships among the actors are constructed in such a way that the individual competitive ability of each actor and also of the group is increased without the other individual strategic elements being minimized [38]. By working together to obtain mutual benefits, the actors involved even the competitors collaborate so that the system in which they are involved will benefit [30].

When bringing together descriptive elements for competitive relationships as well as for collaborative and cooperative relationships, the co-competitive arrangements demand of the actors involved the ability to deal with the gains related to the cooperative and collaborative portion of the relationship, such as access to external sources of knowledge and know-how [45]; at the same time, they are forced to differentiate themselves and to generate competitive advantages, distinct from those of the actors with whom they are in a relationship [10]. Thus, the cooperative portion of the relationship ensures the proper functioning of the relationship [24].

III. CO-PELITITION IN INTERPERSONAL NETWORKS: A POSSIBLE ALTERNATIVE?

Co-competitive relationships involve two types of logic of different interactions: competition and cooperation. On the one hand, there is hostility motivated by the conflict of interests and, on the other hand, the need to establish mutual commitment and trust so that the common goal of the two actors is attained [29].

In the literature about cooptation, it is possible to see at least three main theoretical perspectives which enable the construction of an understanding of cooptative relationships: economy of transaction costs [23], [29], [47], resource-based view [29], [47], and game theory [18], [23], [29], [43]-[45].

Collaboration, from the perspective of economy of transaction costs, in forming the concept of cooptation, is in the understanding of the need of an actor to establish coordinated actions with the competitors in collaborative arrangements where each one supplies the group with that resource which only that actor holds, and that is important or necessary for all. It should be considered that this perspective takes into account risk and trust. The actors will choose to ally themselves with their competitors in a scheme in which the possibility of gain is greater – even if just a little – than the risk of being the victim of an opportunistic action of a partner.

Economy of transaction costs refers to the theory of the firm [21], [65], [66]. According to this theory, transaction costs define whether a resource will be produced externally or internally. Returning to the issue of cooptation, it is worth it for an actor to align him/herself to another, who has a specific resource, if the risk of suffering an opportunistic action by that actor is neutralized by the cost of internalizing the production of that resource [29], [47].

The resource-based view [21], [54] asserts that an institutional actor needs, first, to develop distinct competitive advantages in order to be chosen as a supplier of a particular good or service in a market. Thus, the actor in question must identify the key resources and evaluate whether they: have value in the relationship in which this actor is involved; are rare, not easily copiable and are irreplaceable. If these internal resources are handled correctly, this actor will occupy an advantageous position in relation to the peers. This theoretical model gives support and helps in the construction of the concept of cooptation, since it is the offer of these unique resources that provides an actor with the attraction factor to which other actors join in the search for the development of something common [29], [47].

The understanding that individuals are not always well-intentioned and tend to look out first for themselves and their needs before those of the collective and, antagonistically, the perception that cooperation occurs nevertheless, and that civilization is based on this cooperation [5], is a good starting point from which to understand collaboration from the concepts of game theory for the construction of the concept of cooptation. The approach of the games deals with the actors' choices, and represents another source of support for the construction of the concept of cooptation. It is applied in the study of relationships in which a cooperative equilibrium emerges through the actions of the actors [3]-[5], [50]. It is applied in the study of relationships in which a cooperative equilibrium emerges through the actions of the actors.

The main method used to explain game theory is by illustration, through the paradigm of choice, through the game of the Prisoner's Dilemma. In this game, two individuals are arrested by the police, but the police don't have sufficient information for a conviction. The strategy used by the police, then, is to separate the two men and make a similar offer to each one: betray the accomplice and be released while the accomplice is sentenced to a year in prison. However, if the accomplice also betrays him, both are imprisoned for three months. If both remain silent, the two will be imprisoned for one month. This being the case, the obvious choice is not to betray the accomplice (the logical decision), but rather to keep silent because this path minimizes the damage.

The prisoner's dilemma in this recurring application illustrates that, in human relations, the choice for cooperation outweighs the risk of adopting a predatory, competitive posture. Despite the reward being greater in the situation in which one of the suspects betrays the one who remains silent, the most frequent choice [3]-[5] is to minimize the damage instead of trying to get the best deal and both choosing to remain silent.

This dilemma is used as a strong argument in favor of a collaborative association among competing institutions [18] and, as seen, this applies to relationships among competitors at both the meso and the micro levels.

In addition to these three primary theoretical bases, there are structural issues about the network [11], the dynamic abilities of the actors [47], [60], and the factors related to the immersion of the actors in the structure [61], such as other elements that help to consolidate the construction of the concept of cooptation in the literature.

Dependency among competitors may occur as a function of the characteristics of the network, since the actions of the actors shape the network and the network shapes the actions of the actors who participate in them [11]. These issues, which involve the formation and the dynamic of the network, show the tendency of the actors to adopt collaborative postures with other agents in the network with whom they compete for a scarce resource. In addition, the understanding of this dynamic and structural influence allows the understanding that in some aspects of relationships among actors competition will be greater than collaboration, and in others the situation will be reversed. However, due to the need to maintain the network, actors tend to adopt a posture that minimizes the uniquely predatory posture.

The dynamic abilities of the actors refer to the acquisition of new knowledge which becomes transformed into competitive advantages. The actors, in this perspective, learn both internally and externally to develop their competitive advantages. External learning is encouraged because through it *know how* is obtained from other actors involved in cooperative arrangements, even if they are their direct competitors [47], [60]. In this way, actors choose to establish cooperative relationships which provide learning from sharing knowledge [61].

The relationships that are established among the actors, as stated, influence, and are influenced by, the network. Once a network is established, the relationships among the actors involved tend to be managed by the actors themselves, immersed in the structure through collaborative actions, with the goal of perpetuating the benefits obtained by the actors in the network [61]. Maintenance of the network becomes the task of all actors involved, since the well-being of all is more important than maximizing the results obtained by only one actor [11].

One example that illustrates the application of the conceptual bases described above for interpersonal relationships is that of a relationship that may be established among a cook, a hunter and a carpenter who live in a small village. They all compete for food and shelter, and each one has a specific set of skills that is important to the group, but is not exactly

distinctive since the carpenter can learn to cook, the hunter can learn to work with wood and the cook can learn to hunt, for example. However, the costs involved in the learning processes for each of these individuals may represent losses in their main activities. Each one of them will need time to learn this new skill alone, and the time dedicated to learning alone is time that each one will not be performing the task that is his specialty.

Thus, deciding to cooperate, they all collaborate with the group to supply the results of their work and to obtain the benefit of the results of the work of the other actors involved. If one of the individuals judges it worthwhile to take the risk of producing less of what is his specialty in order to learn a new skill, the cooperative relationship with one of his peers, or even with the group, may be undermined. It is at this balancing point of the relationships among these individuals that the analogy may be seen with the meso scenario, in which the costs involved in producing a resource internally or obtaining this resource from external sources are taken into account. This encapsulates the collaboration of the theories of transaction costs and of the vision based on resources, in order to understand cooperative relationships.

Moreover, the choice of each of the individuals not to cooperate with his peer may lead to unpleasant consequences. For example, if the cook does not collaborate with the carpenter, he may have food but not the shelter necessary to protect him from the weather. Therefore, minimizing his gains and sharing the fruit of his labor can provide the benefit of shelter. The perpetuation of the relationships among the cook, the carpenter and the hunter consolidate a network of mutual benefits which strengthen over time. Breaking down these relationships would be uncomfortable for the actors.

From this example, it is understood that collaborating with a competitor is a risky business, since the chances of being the victim of an opportunistic action of the adversary is high [29].

On the other hand, the frequency of the interactions among the actors may reduce the risk of an opportunistic action since the actors tend to learn about their peers and a routine is created [47]. Nevertheless, the risk is not totally eliminated because protecting a specific resource, like tacit knowledge, for example, is difficult. This stimulates each of the actors involved to develop new, unique skills which make his presence in this scheme of greatest benefit to the group. Furthermore, even knowing that there is a chance of maximizing individual gain, the risk is high and the actors tend to act with the goal of perpetuating the relationship and not eliminating the competition.

Although the theoretical principals listed refer to a meso context, through the example it is possible to understand that these principles apply to interpersonal relationships.

Observing the types of cooperative relationships that may be established among actors provides another way to verify the application of these relationships to a micro context. Although there are not many studies that propose a typology of cooperative relationships [64], the effort is valid and helps to support the purpose of this study.

When the types of cooperative relationships are observed according to the amount of competition and collaboration existing in the relationship – cooperation dominating, egalitarian relationship, and competition prevailing [11] – the analogy that refers to the application in meso and micro contexts remains valid. In the micro context, the relationships among each pair of actors may be displaced by collaboration or by competition, even when the actions of the actors are not to compete directly in their specialties.

Another classification of cooperative relationships, this time according to purpose [28], is also applicable to interpersonal relationships since these may be established for the exchange of knowledge, mutual collaboration in research and development activity, establishment of standards and integration of activities.

A third typology of competition [25] proposes that this type of relationship may occur directly or indirectly between buyers and suppliers, and among partners who compete directly. The example used in this study places individuals clearly within the three types of competition proposed by this typology.

The Cook, the Carpenter and the Hunter compete directly, fighting for the scarce resources of shelter and food. They compete indirectly in relation to the raw materials necessary to perform their functions, since they all need wood to make their work tools, but this resource is the primary part of only the carpenter's activity. In an expanded case of the network in the proposed example, a third type of cooperative relationship of this typology may be seen. A new group may connect with these three first individuals and another carpenter may join the first to provide a new type of construction, of a more elaborate shelter, that requires the specialized work of more professionals.

IV. CONCLUSIONS

While the concept of cooperation in a competitive context is quite clear and important for the understanding of the relationships among individuals [3]-[6] and also in game theory [18], [68], in the literature on Administration, the coinciding cooperative and competitive relationships only report relationships in a meso context [57]. That is, at the level of organizations.

Despite studies dedicated to these topics focusing predominantly on organizations, in their context it is possible to see that part of the conceptual base for this type of relationship has its core based on a micro approach, related to individuals [16], [17], [19], [26], [33], [48].

In addition to this, the application of the concepts which serve as the basis to explain cooperative relationships works, as seen, at both the meso and micro levels. Assisting this argument, in order to develop cooperative relationships the placement of the actors – individuals or organizations – must unite interactions, relationships, attitudes, motives, objective needs, and actions in common [67].

Based on the theoretical characteristics and components that provide the conceptual support for competition, it is not possible to identify theoretical arguments that justify this construct being applied only to interorganizational relationships. Even in a context of interpersonal relationships, it is possible to see the same components that stimulate collaborative relationships with competitors.

From the analysis of the concept of cooptation and the intimate relationship with the concepts of collaboration and cooperation identified and described, it is possible to weave arguments that allow the conclusion that there is nothing in the conceptual presentation about cooptative relationships that binds this concept to the meso context. The same premises which rule the relationships of businesses may be applied to relationships among people.

When the topic of networks is treated in studies of Administration or Economics, there is normally a type of tendency to approach the organizational agents and treat them as rational individuals in a network of purely economic relationships. However, the concepts treated therein, such as those already referenced, may also refer to social relationships in a micro context; that is, as interpersonal relationships.

It must be made clear, however, that this is not to deny that relationships among people can be treated differently than relationships among institutions. What is proposed here is that the same principles used at one level be adopted when analyzing relationships formed at another level. In the end, networks are networks.

REFERENCES

- [1] Achrol, Ravi S. Changes in the theory of interorganizational relations in marketing: Toward a network paradigm. *Journal of the Academy of Marketing Science*. 25 (1), 56-71, 1997.
- [2] Ahuja, Gautam. Collaboration Networks, Structural Holes, and Innovation: A Longitudinal Study. *Administrative Science Quarterly*. 45 (3), 425-455, 2000.
- [3] Axelrod, R., & Hamilton, William D. The Evolution of Cooperation. *Science*. 211 (4489), 1390-1396, 1981.
- [4] Axelrod, R. The evolution of strategies in the iterated Prisoners' Dilemma. In L. Davis, editor, *Genetic Algorithms and Simulated Annealing*. Morgan Kaufmann, Los Altos, 1987.
- [5] Axelrod, Robert. The Evolution of Cooperation. In: GROMYKO, Anatoly & HELLMAN, Martin (Org.), *Breakthrough: Soviet and Western Scholars Issue a Challenge to Build a World Beyond War*: New York, Walker and Company, 1998.
- [6] Axelrod, R., & Dion, D. The Further Evolution of Cooperation. *Science* 242 (4884), 1385-1390, 1988.
- [7] Balestrin, A., Vargas, L. M., Fayard, P. Criação de conhecimento nas redes de cooperação interorganizacional. *Revista de Administração de Empresas*. 45 (3), 52-64, 2005.
- [8] Balestrin, A., Verschoore, Jorge Renato., & Junior, Edgar R. O campo de estudo sobre redes de cooperação interorganizacional no Brasil. *Revista de Administração Contemporânea*. 14(3), 458-477, 2010.
- [9] Barabási, A.-L. *Linked: How Everything is Connected to Everything Else and What it Means for Business, Science and Everyday Life*. New York: Plume, Penguin Group, 2003.
- [10] Bengtsson, M., Hinttu, S., & Kock, S. Relationships of Cooperation and Competition between Competitors. *Work-in-progress Paper submitted to the 19th Annual IMP Conference*. Lugano, Switzerland, 2003.
- [11] Bengtsson, M., & Kock, S. "Coopetition" in Business Networks – to Cooperate and Compete Simultaneously. *Industrial Marketing Management*. 29: 411-426, 2000.
- [12] Bertolin, Rosângela V., Santos, Antônio C. Dos., Lima, J. Braga., & Braga, Marcelo J. Assimetria de informação e confiança em interações cooperativas. *Revista de Administração Contemporânea*. 12(1), 59-81, 2008.
- [13] Biermann, Rafael. Towards a theory of inter-organizational networking: the euro-atlantic security institutions interacting. *Review of International Organizations*, 3(2), 151-177, 2008.
- [14] Blau, Peter M. A Macrosociological Theory of Social Structure. *The American Journal of Sociology*, 83(1), 26-54, 1977.
- [15] Blau, Peter M. Contrasting theoretical perspectives. In: Alexander, J et al. (Orgs.) *The micro-macro link*. Berkeley: University of California, p. 71-85, 1987.
- [16] Boissevain, J. The place of non-groups in the social sciences. *Man*. 3, 542-556, 1968.
- [17] Borgatti, Stephen P., & Foster, Pacey C. The Network Paradigm in Organizational Research: A Review and Typology. *Journal of Management*. 29(6), 991-1013, 2003.
- [18] Brandenburger, A. M., & Nalebuff, B. J. *Co-opetition*. New York: Doubleday, 1996.
- [19] Castilla, E. J., Hwang, H., Granovetter, E., & Granovetter, M. *Social Networks in Silicon Valley* In: Lee, C.M.; Miller, W. F.; Hancock, M. G. E Rowen, H. S. (ed.), *The Silicon Valley Edge*, Stanford: Stanford University Press, 2000.
- [20] Chandler, A. D. *Strategy and Structure: Chapters in the history of the Industrial Enterprise*. MIT Press, 1990.
- [21] Coase, R. H. The Nature Of The Firm. *Economica*, New Series 4, (16), 386-405, 1937.
- [22] Cowan, R. Network models of innovation and knowledge diffusion. *Research Memoranda*. – Disponível em <econpapers.repec.org>. Acesso em 26/10/2010, 2004.
- [23] Dagnino, G. B., & Padula, G. Coopetition Strategy: A new kind of interfirm dynamics for value creation. *Paper presented at the EURAM– The European Academy of Management*, 2002.
- [24] Das, T. K., & Teng, Bing-Sheng. Instabilities of Strategic Alliances: An Internal Tensions Perspective. *Organization Science* 11 (1), 77-101, 2000.
- [25] Dowling, M. J., Roering, W.D., Carlin, B. A., & Wisnieski, J. Multifaceted Relationships Under Coopetition: Description and Theory. *Journal of Management Inquiry* 5 (2), 155-167, 1996.
- [26] Fombrun, C. J. Strategies for Network Research in Organizations. *Academy of Management Review*. 7 (2), 280-291, 1982.

- [27] Franco, Mário J. B. Tipologia de Processos de Cooperação Empresarial: uma investigação Empírica sobre o Caso Português. *Revista de Administração Contemporânea*. 11 (3), 149-176, 2007.
- [28] Garraffo, Francesco. Types of co-opetition to manage emerging technologies. In: *Conference Proceedings of the European Academy of Management*, 2002.
- [29] Garcia, Cristina Q., & Velasco, Carlos A. B. Co-opetition and performance: evidence from european biotechnology industry. *Paper presented at the EURAM– The European Academy of Management*, 2002.
- [30] Gee, E. Preston. Co-opetition: The New Market Milieu. *Journal of Healthcare Management*. 45(6), 359-363, 2000.
- [31] Guimarães, André S. Estratégias competitivas adotadas por empresas de tecnologia da informação. *Revista de Administração*. 37 (3), 86-95, 2002.
- [32] Granovetter, Mark. The Strength of Weak Ties. *American Journal of Sociology*. 78, 1360-1380, 1973.
- [33] Granovetter, Mark. Economic Action and Social Structure: The Problem of Embeddedness, *American Journal of Sociology*. 91 (3), 481-510, 1985.
- [34] Granovetter, Mark. Economic Institutions as Social Constructions: A Framework for Analysis. *Acta Sociologica*. 35, 3-11, 1992.
- [35] Guimarães, André S. Estratégias competitivas adotadas por empresas de tecnologia da informação. *Revista de Administração*. 37 (3), 86-95, 2002.
- [36] Gulati, R., Nohria, N., & Zaheer, A. Strategic Networks. *Strategic Management Journal*. 21, 203-215, 2000.
- [37] Jarillo, J. C. On Strategic Networks. *Strategic Management Journal*. 9, 31-41, 1988.
- [38] Ketchen Jr, David J., Snow, Charles C., & Hoover, Vera L. Research on Competitive Dynamics: Recent Accomplishments and Future Challenges. *Journal of Management* 30 (6), 779-804, 2004.
- [39] Khanna, T., Gulati, R., & Nohria, N. The dynamics of learning alliances: competition, cooperation, and relative scope. *Strategic Management Journal*. 19 (3), 193-210, 1998.
- [40] Kilduff, M., Tsai, W., & Hanke, R. A paradigm too far? A dynamic stability reconsideration of the social network research program. *Academy of Management Review*, 31 (4), 1031-1048, 2006.
- [41] Kotzab, Herbert., & Teller, Christoff. Value-adding partnerships and co-opetition models in the grocery industry. *International Journal Of Physical Distribution & Logistics Management*. 33 (3), 268-281, 2003.
- [42] Lado, Augustine A., Boyd, Nancy G., & Hanlon, Susan C. Competition, cooperation and the search for economic rents: a syncretic model. *Academy of Management Review* 22 (1), 110-141, 1997.
- [43] Leite, Ramon S., Lopes, Humberto E. G., & Silva, Suelen A. D. A Estratégia em Relacionamentos Coopetitivos: um estudo do arranjo produtivo de Nova Serrana. *Revista Brasileira de Gestão de Negócios*. 11 (30), 65-78, 2009.
- [44] Levy, M., Loebbecke, C., & Powell, P. SMEs, co-opetition and knowledge sharing: the role of information systems. *European Journal of Information Systems*, 12(1), 3-17, 2003.
- [45] Loebbecke, Claudia., Van Fenema, Paul C., & Powell, Phillip. Co-Opetition and Knowledge Transfer. *The DATA BASE for Advances in Invmation Systems* 30 (2), 14-25, 1999.
- [46] Luo, Xueming., Slotegraaf, Rebecca., & Pan, Xing. Cross Functional ‘Coopetition’: The Simultaneous Role of Cooperation and Competition Within Firms. *Journal of Marketing*. 70, 67–80, 2006.
- [47] M'chirgui, Z. The economics of the smart card industry: towards coopetitive strategies. *Economicsof Innovation and New Technology*. 14 (6), 455-477, 2005.
- [48] Newman, M. E. J., & Park, J. *Why social networks are different from other types of networks*. Pr/eprint, 2003.
- [49] Nohria, N., & Eccles, R. G. *Networks and Organizations: Structure, form and action*. Boston: Harvard Business School, 1992.
- [50] Nowak, M.A., Sigmund, K., & Leibowitz, M.L. Cooperation versus Competition. *Financial Analysts Journal*, 56(4), 13-22, 2000.
- [51] Oliver, A. L., & Ebers, M. Networking network studies: an analysis of conceptual configurations in the study of inter-organizational relationships. *Organization Studies* 19 (4), 549-583, 1998.
- [52] Padula, Giovanna., & Dagnino, Giovanni B. Untangling the Rise of Coopetition: The Intrusion of Coopetition in a Cooperative Game Structure. *International Studies of Management and Organizations*. 37 (2), 32-53, 2007.
- [53] Peng, Mike W., & Luo, Yadong. Managerial ties and firm performance in a transition economy: the nature of a micro-macro link. *Academy of Management Journal* 43(3), 486-501, 2000.
- [54] Penrose, Edith Tilton. *A teoria do crescimento da firma*. Campinas: Editora da UNICAMP, 2006.
- [55] Rindfleisch, Aric. Organizational Trust and Interfirm Cooperation: An Examination of Horizontal Versus Vertical Alliances. *Marketing Letters*. 11 (1), 81-95, 2000.
- [56] Sauaia, Antônio Carlos A., & Kallás, David. O dilema cooperação-competição em mercados concorrenciais: o conflito do oligopólio tratado em um jogo de empresas. *Revista De Administração Contemporânea*. 1a. Edição Especial: 77-101, 2007.
- [57] Schillo, Michael., Fischer, Klaus., & Klein, Christof T. The Micro-Macro Link in DAI and Sociology, in: Moss, Scott and Paul Davidsson (Eds.). *Multi-Agent Based Simulation*, Berlin, p. 133–148, 2000.
- [58] Sheth, Jagdish N., & Sisodia, Rajendra S. Revisiting marketing's lawlike generalizations. *Journal of the Academy of Marketing Science*. 27 (1), 71-87, 1999.

- [59] Silva, Jorge Ferreira Da., Motta, Paulo Cesar., & Costa, Lenise S. De V. Coalinhamento entre estratégias competitivas e colaborativas e desempenho de empresas. *Revista de Administração de Empresas*. 47(4), 26-45, 2007.
- [60] Teece, D. J., & Pisano, G. The Dynamics Capabilites of Firms: An introduction. *Industrial and Corporate Change*. 3(3), 537-566, 1994.
- [61] Tsai, Wenpin. Social Structure of “Coopetition” Within a Multiunit Organization: Coordination, Competition, and Intraorganizational Knowledge Sharing. *Organization Science*. 13 (2), 179-190, 2002.
- [62] Vanhaverbeke, W., Gilsing, V., Beerkens, B. & Duysters, G. The role of alliance network redundancy in the creation of core and non-core technologies. *Journal of Management Studies*. 46(2), 215-244, 2009.
- [63] Verschoore, J. R., & Balestrin, A. Fatores Relevantes para o Estabelecimento de Redes de Cooperação entre Empresas do Rio Grande do Sul. *Revista de Administração Contemporânea*. 12 (4), 1043-1069, 2008.
- [64] Walley, K. Coopetition: An introduction to the subject and an agenda for research. *International Studies of Management and Organizations*. 37 (2), 11-31, 2007.
- [65] Williamson, Oliver E. Markets and Hierarchies: Some Elementary Considerations. *The American Economic Review*, 63 (2), 316-325. Papers and Proceedings of the Eighty-fifth Annual Meeting of the American Economic Association, 1973.
- [66] Williamson, Oliver E. *The economic institutions of capitalism: firms, markets, relational contracting*. New York: The Free Press, 1985.
- [67] Zineldin, Mosad. Co-opetition: the organisation of the future. *Marketing Intelligence and Planning* 22(7), 780-790, 2004.
- [68] Zhong, L.-X., Zheng, D. F., Zheng, B., Xu, C., Hui, P. M. Networking effects on cooperation in evolutionary snow-drift game. *Europhys* 76, 724–73, 2006.