

The Interplay between Cooperation and Competition in Business Networks:

The Case of Ericsson in Brazil

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ABSTRACT

When studying firms in business networks, researchers have tended to focus on aspects of cooperation, while competition has been less examined. One exception is the concept of cooptation, which has been explored in order to take competitive aspects of business networks into account. The purpose of this paper is to contribute to the network approach literature by addressing the concept of competition, as well as interactive outcomes of competition, i.e. cooperation and cooptation. Specifically, the paper aims to understand why firms move from cooperation to competition in the context of the IT (information technology) industry in an emerging economy such as Brazil. To accomplish this, we conduct a case study of two different relationships where cooperation turns to competition. The case is based on the development of an IT solution for public transportation in which local and foreign MNCs interact during and after the project. The preliminary findings suggest that the higher the level of complementarity or interdependence, the higher likelihood of developing a more cooperative strategy. In contrast, the lower the level of interdependency, the higher the degree of competition: meaning that partners will choose a competitive strategy instead.

Keywords: Cooperation, Competition, Cooptation, Network Approach, Business Relationships, IT – Industry

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INTRODUCTION

In times when mobile technology is changing every industry from healthcare to banking, the locus of innovation might be not limited to the in-house creation of ideas (Chesbrough, 2003). Instead, companies are searching to acquire external ideas by cooperating with other actors. This focus on cooperation is in line with the IMP-tradition, where interaction and interdependence of actors, resources and activities for several decades have been stressed. By interacting, the actors involved develop relationships and these are frequently long-term and based on mutual trust. A cornerstone in this tradition is the emphasis on vertical relationships and numerous studies have explored various aspects of customer-supplier relationships. As noted by Ford and Håkansson (2013, p. 1019) “the importance and specificity of those relationships to companies means that cooperation, consent and mutuality are at the centre of business interaction and the business landscape is likely to be characterized by heterogeneity, adaptation, interdependence and stability.” Although Håkansson and Ford admit that conflict and competition also might occur, their conclusion is that “IMP research has led to an interpretation of business as an overwhelmingly cooperative venture” (2013, p. 1023) while the aspect of competition in business relationships has attained more limited attention.

However, there is a growing interest in the research community to study the interplay between cooperation and competition. Valuable insights have already been given by research on cooptation which has been conceptualized as a strategy that includes both competition and cooperation between firms. Such inter-firm cooptative strategies can be beneficial not least for knowledge development and competitiveness (Bengtsson & Kock, 2000; Brandenburger & Nalebuff, 1996; Gnyawali & Park, 2011) but so far research has predominantly emphasized horizontal cooptation, for instance strategic alliances, between former competitors (see e.g., Bengtsson & Kock, 2000; Gnyawali & Park, 2011; Wu, 2014; Yami & Neme, 2014).

Interestingly, when studying horizontal cooptation, Gnyawali and Park (2011) found that cooptation between competitors causes competition among other firms and results in technological progress. From a managerial perspective, firms seek collaboration with competitors in order to increase their global competitive advantage and such a type of collaboration might result in incremental innovation, or even, via radical innovation, in the substitution of standard technologies. In the context of high-tech industries, in which firms face challenges such as shortening product life-cycles due to rapidly changing customer preferences, a cooptation strategy appears to be of particular relevance (Garud, 1994; Gnyawali & Park, 2011). An example is Ericsson, Huawei and NSN (Nokia Siemens Network), the big players and rivals from the high-tech industry, who recently signed a memorandum for collaboration aiming to enable their OSS (operation support systems) interfaces interoperable and standardized among them - i.e. the vendors. This will help telecom operators (their major customers) to simplify their activities. At present, the available technology appears too costly and complex (Ericsson News, 2013) and certainly improvements will have an impact on the whole telecom industry. In such a case, the need for convergence and integration of multiple technologies, as well as the need to find solutions for complex issues, are crucial.

Even so, managing a cooptative relationship is complex because actors are “involved in a relationship that on the one hand consists of hostility due to conflicting interests and on the other hand consists of friendliness due to common interests” (Bengtsson & Kock, 2000, p. 412). This tension seems to be an integral part of the cooptation paradox (Raza-Ullah, Bengtsson & Kock, 2014) and it becomes even more interesting when the actors involved are not former competitors but have a long business relationship. Since few studies have analysed cooptation in respect to the customer-supplier side (Lacoste, 2012), we aim to contribute to the literature by augmenting the knowledge of both horizontal and vertical cooptation. Rather

than focusing only on collaboration with competitors or competition with business counterparts, we focus our observations on firms that simultaneously or sequentially compete and cooperate with each other. This is of special interest since research on cooperation has developed quite independently from research on competition. Building on a business network perspective, the paper addresses this critical gap through the following questions: a) why do firms move from cooperation to competition in the context of high-tech industry and b) what are the main implications on a firm's network position and network role from switching between cooperation and competition?

We base our discussion on a case study illustrating what firms actually do. This is in line with the strategy-as-practice perspective where three inter-related elements - practices (the tools and methods of strategy making), praxis (how strategy works takes place) and practitioners (the role of the actors involved) – are central (see Vaara & Whittington, 2012). In accordance with the strategy-as-practice perspective we also focus on other consequences than economic performance and put forward the importance of qualitative methods such as interviews with respondents at various levels in firms where important episodes of strategizing are highlighted. Our case study involves Ericsson and some of its main counterparts in Brazil where both vertical and horizontal relationships are analyzed. Since most studies on cooperation are based on data from developed countries, the Brazilian context might add some new insights.

The paper is structured as follows. The section below provides a review of the literature on competition, cooperation and competition, followed by a section on method. After that the empirical study is presented, where the story of Ericsson and two of its local counterparts in Brazil is outlined. The different relationships highlight different stories of innovation and illustrate the levels of cooperation and competition. The following section presents the analysis and explanations for how and why the actors change positioning over time. The paper ends with some concluding remarks.

THEORY

Strategic management literature has traditionally been anchored to the firm's strategy to better compete in the marketplace (Porter, 1980). In this *competitive paradigm*, competitive advantage is expected to be achieved at the expenses of other firms. This implies that firms are positioned to follow a self-interested-oriented behavior where their aim is to get above-normal profits and acquire a competitive advantage over others. Thus, firms compete for a market share that all of them cannot equally obtain and therefore they hold a divergent interest that encourages a strategy toward achieving their private goals (see Figure 1 below and Table 1 in Appendix A). According to this school of thought, firms that know how to obtain and use resources more efficiently are expected to receive high economic rents (Porter, 1979; Porter, 1980).

In contrast with the competitive paradigm, other scholars studying firms' strategies emphasize that competitive advantage can be achieved not at the expenses of other firms but through cooperation (Håkansson & Snehota, 1995). In this *cooperative paradigm*, the business world is built up by a network of relationships developed and nurtured via collaboration where mutual benefits, instead of self-interests, dominate (Håkansson et al., 2009). This implies that the performance of one firm is positively associated with the performance generated by the other firm, which might lead them to a more cooperative behavior due to the presence of mutual goals and greater interdependencies (see Figure 1 below and Table 1 in Appendix A). Relationships are built and developed on trust and mutuality (Morgan & Hunt, 1994). Due to the emphasis on the economic importance of

cooperation between business actors, this line of reasoning has mostly neglected the conflict and tensions that can arise in the presence of competition (Ford & Håkansson, 2013).

The competitive and cooperative paradigms have mostly treated cooperation and competition as two mutually exclusive events; even though it has been recognized by the research community that firms might engage in both competition and cooperation with each other, i.e. coopetition (Bengtsson & Kock, 2000; Brandenburger & Nalebuff, 1996). The two paradigms offer only a partial view of the reality since there is no perfect competition or perfect cooperation. Thus, the coopetitive view appears to be an alternative linking the competitive and the cooperative paradigms. Figure 1 illustrates a coopetitive view. Coopetition is situated in the middle indicating a balance between the pure state of competition and the pure state of cooperation. By being in the middle, it also suggests that a partial convergence of interests within inter-firm interdependences can be achieved. This is in line with Padula’s and Dagnino’s (2007) arguments that in coopetition firms are expected to converge just partially to the congruence of goals. The arrows represent the opposite side of the continuum.

Researchers interested in the phenomenon have applied different theories to explain this opposite logic of interaction. Groups applying game theory see coopetition as a positive-sum game in which both parties involved in cooperation will create value and share the benefits created (Brandenburger & Nalebuff, 1996; Padula & Dagnino, 2007). Another group of scholars uses the resource-based view and acknowledges cooperation as a beneficial way for firms to develop and leverage resources to improve competitiveness (Chen, 1996). As already indicated above, there is also another line of research that focuses on the network approach which traditionally is centered on aspects of cooperation whereas in this group competition has rarely been taken into consideration (Ford & Håkansson, 2013).

In this paper, we aim to contribute to the network literature by discussing the coevolution between competition and cooperation in both horizontal and vertical business relationships. A well-defined role that actors play to create value is no longer consistent with the constant change that many industries face today. The high-tech industry is an example of such a changing environment, with the emergence of disruptive technologies – e.g., mobile technologies - that have displaced existing ones and that have the potential to create a new market or change the way that people interact and do business (Garud, 1994). According to Johansson (2012), there is a continuous changing role played by different actors in the network where a customer in one activity can simultaneously be a competitor, supplier or partner in another activity. Following this line of reasoning, we aim to understand and examine such a multifaceted process.

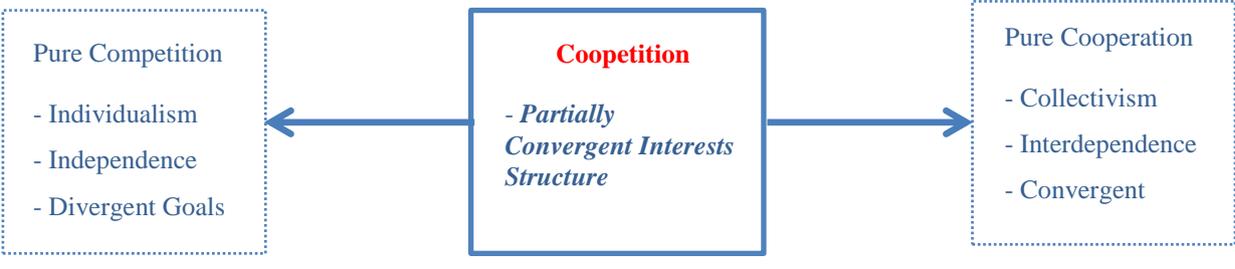


Figure 1: The Coopetitive View (Adapted from Eriksson, 2008)

Network dynamics and resource combinations

As the network perspective can be fruitful when examining the interplay between competition and cooperation, this paper applies a network approach. Here competition is considered as an interactive process, which depends on individuals' perception and experience within organizations which, in turn, will influence decision making as well as the intensity and level of interactions between partners (Bengtsson & Kock, 2000; Bogner & Howard, 1993).

With a network perspective, the "market" is considered as a constellation of actors which interact with each other. When interacting, firms might develop, nurture and choose relationships with different actors such as customers, suppliers, nonprofit organizations, political actors and even competitors. Hence, firms are part of a context or a network of relationships with interaction occurring dynamically and changing over time. The nature or duration of a relationship will depend on the firm's objectives (Håkansson et al., 2009). Thus, partnerships can be temporary; for instance, two competitors working together to achieve a specific goal may cease collaborating once the goal is reached. Relationships might run for a long time among partners, however less likely between competitors.

In this research stream that focuses on cooperation, each firm is considered to be a heterogeneous entity which faces scarcity of resources. Therefore, establishing relationships with other actors might be valuable to gain access to external knowledge, for instance when it comes to developing new technology or for exploring new business opportunities. Overall, firms search for partners that are trustworthy, have similar objectives and have resources that complement each other making the relationship being of an interdependent type (Hadjikhani & Thilenius, 2005).

The combination of complementary resources may allow for innovation since it integrates different kinds of knowledge and such a recombination may create something new. On the other hand, if the partners have similar skills, resources and/or capabilities, it is less likely that new knowledge is developed, since the partners are rather similar and therefore they do not complement each other. This is in line with Hess' and Rothaermel's (2011) study about resource combination along the value chain in the pharmaceutical industry. In their analysis, they found that "*resource combinations that focus on the same value chain activities provide redundant knowledge and, thus, are substitutes. [...] resource combinations that link different value chain activities are complements, because they bring together different types of knowledge needed to complete the innovation process*" (Hess & Rothaermel, 2011, p. 896).

According to Milgrom and Roberts (1995), assets or activities are mutually complementary if the marginal return of an activity increases the level of the other activity. Hence, firms will choose to collaborate instead of competing if they expect a higher return than developing, for instance, a certain technology alone in the presence of mutually complementary activities or assets. We argue that the combination of resources that focus on the same activities provide redundancy.

Within a business network then, firms will benefit from combining their resources with firms that have complementary resources, and this, in turn, would lead to a resource combination resulting in a cooperative relationship. On the other hand, resource combinations resulting in redundant assets would not be efficient from a resource combination perspective, and firms controlling similar resources would therefore tend to compete rather than cooperate. According to Chen et al. (2007), the strength of cooperation and competition can be associated with the degree of complementarity, trust and tie-strength where cooperation dominates and competition scores low. In other words, when the degree of perceived complementarity is high, partners will have a strong incentive to cooperate. Contrariwise, when the degree of perceived similarity is high, firms will tend to compete instead.

Coopetition in vertical and horizontal relationships

In this section, we provide an outline concerning coopetition in vertical and horizontal relations. As mentioned previously, the horizontal relationship is the one developed and nurtured between or among competitors while the vertical relationship refers to the one built between customer and supplier. According to Easton and Araujo (1992), both horizontal and vertical relationships, even though they tend to be quite different in nature, contain elements of competition/conflict and cooperation/harmony. Thus, firms engaging in coopetition will require managerial skills to manage tensions that might emerge in the presence of such contradictory elements.

Horizontal coopetition

As noted before, high-tech industry firms have more incentives to cooperate with competitors due to – but not limited to – high R&D costs, changes in customer preferences, short product life cycles, the need for convergence of technology and standardization, necessity to solve complex issues such as urban mobility, etc. On a broader front, cooperation with competitors may enable firms to create solutions that no firm alone could offer. Such factors motivate firms to cooperate with competitors, mainly because positive outcomes, for instance in terms of economy of scales, cost sharing, and standardization in terms of technology applied in the industry, can be achieved.

Studies by Gnyawali and Park (2011) have shown that adopting coopetition in the firm strategy has helped to advance technological innovation. Coopetition indeed brings improvements in existing products; which is good for end-customers and firms involved alike (Gomes-Casseres, 1994). Bengtsson and Kock (2000) affirm that competitors collaborate in activities not related to customer activities, such as cooperation for designing a new product, and simultaneously compete for market share.

When studying the relationships between coopetition and successful product innovation, Wu (2014) found an inverted U-shaped relationship. By showing the negative and positive effects of coopetition the author demonstrates that at a certain level of cooperation, the negative aspect surpasses the positive ones and then the intensity of cooperation tends to decline. This happens because the interplay between cooperation and competition may cause tension in the relationship; thus, costs and challenges involved in managing such relation, after the threshold point, offset the benefits created by it. Luo et al. (2007) affirm that in cooperating with competitors, firms might need to dedicate a substantial amount of resources to protecting their investments and such necessity for monitoring might decrease their innovation efficiency.

In the same line of thinking, Selnes and Sallis (2003) highlight that excessive cooperation and trust might allow opportunistic behavior by a firm's partner which is a competitor. The risks of opportunistic behavior from a competitor-partner, which may cause knowledge- and market loss, increase tensions (Gnyawali & Park, 2011). Hence, despite the positive outcomes created by coopetition in horizontal relationships, negative outcomes in terms of instability, tensions, crisis and conflicts can emerge in such interactions (Tidström, 2014). Therefore, firms should have a balanced portfolio by leveraging both competitive and cooperative forces (Park et al, 2014; Wu, 2014).

Vertical coopetition

Customer-supplier relationships have mostly been examined as cooperative units. As mentioned earlier, trust, mutuality and commitment are some of the core concepts used to understand the cooperative behavior among firms. Given the cost associated with changing

partners, firms tend to cultivate relationships that are important for them and such relationships are expected to be more stable in comparison with cooperation between competitors; even though conflicts also can emerge.

According to Lacoste (2012), competition between customers and suppliers may occur on the other side of the cooperation, i.e. not when value is created but when firms might be involved in the appropriation of value. In other words, partners have common interests when it comes to value creation and diverse interests when it comes to value appropriation. The author highlights that value creation is considered to be a collective action while value appropriation is considered to be an individual action. Value created in the inter-firm relationships and network refers to explorative issues in terms of innovation, differentiation in terms of products and/or services; while value appropriation refers to issues such as cost reduction achieved in the partnership via, for example, production and distribution (Dyer et al., 2008). Thus, firms in cooperative interaction might have competitive issues or activities that arise through time and then the mutual goals might converge for just a partial convergent interest structure (Brandenburger & Nalebuff, 1996; Luo, 2004; Padula & Dagnino, 2007). Therefore, firms should know how to balance cooperation and competition in their relationships. Eriksson (2008), when studying competition in vertical relationships, emphasizes the importance of achieving a suitable combination of both elements. In this paper, we follow the argument that competition may occur in vertical relationships in respect to value appropriation.

METHOD

Since cooperation and competition is complex phenomena rarely studied together, this study follows a qualitative approach based on a single case study methodology (Dubois & Gadde, 2014; Dyer & Wilkins, 1991; Siggelkow, 2007; Weick, 2007) as this allows for a systematic and deep examination of the phenomenon. Yin (2009) argues that a case study is necessary when; i) the focus of the study is to answer ‘how’ and ‘why’ questions, and when ii) the researcher wants to cover contextual conditions mainly when it is believed that the boundaries between the phenomenon and context are not yet clearly established in the literature. Accordingly, we conduct a case study of two different relationships where cooperation turns to competition in order to cover the contextual condition; to address the ‘why’ and ‘how’ questions as well as to provide more deep insights about the phenomenon and how it is linked with the context. A quantitative method has therefore not been applied in our research, since it is less capable to capture context, process, intentions and interactions. Only few researchers have advocated in favor of qualitative methods in social network theory (O’Donnell & Cummins, 1999; Hollstein, 2011; Bluhm et al., 2010), whereas this methodological focus is more common in studies based on business network theory (Håkasson & Snehota, 1995; Mattsson & Johanson, 2004). In addition, we believe that at this stage, when the literature on cooperation is in the process of theory building – let alone other kinds of interplay between cooperation and competition – a case study is an appropriate method to use.

Case Selection and Data Collection

The case concerns relationships developed during and after a joint project involving Ericsson, Vivo and Dataprom in the emerging economy Brazil. The project is named “The connected buses of Curitiba” and it is developed in collaboration mainly between these three multinational corporations. The ICT-project in Curitiba city in particular is an interesting case

to be analyzed firstly because it is a technology successfully developed in the context of an emerging economy, Brazil. Few studies have analyzed innovation among firms in developing nations (Tellis et al., 2009). In this paper we will not focus on the project itself, however, but on the developments after the collaboration, since our objective is to analyze in depth business network dynamics. In the ICT industry we expect changes taking place in the business environment – and certainly in the structure of the firm’s business network – because of the presence of disruptive technologies and the constant need to innovate.

Hence, the first story illustrates the relationship between Ericsson and Vivo and the second describes Ericsson and Dataprom. Both relationships involve cooperation and competition. We will first introduce Ericsson and Vivo’s partnership in the development of a new technology for weather conditions, followed by Ericsson and Dataprom’s relationship in the development of technology for electronic data transmission.

The data describing the two relationships were gathered through a combination of primary and secondary sources. It is important to emphasize that we are using one case but telling two stories. The primary data were collected as a result of interviews conducted in Sweden and Brazil between September and December 2013 with respondents from the three companies. It is based on 25 interviews, each conducted face-to-face. Table 2 (see Appendix B) details the distribution of interviewed participants and their function in the respective firm. The interviews lasted between 1 and 1.5 hours on average. Some of the interviews were in English but the majority was in Portuguese. The researcher who collected the data speaks both English and Portuguese and is also quite well familiarized with the local culture. The interviews were recorded and transcribed in both languages (Portuguese and English), thus permitting accurate representation of the information and assuring reliability of the data.

The interviews were conducted using a semi-structured guide of questions whose themes were: 1) general questions about the project that the companies were primarily involved in, 2) questions about the nature of the collaboration and aspects of the relationships among the actors, 3) questions related to the previous relationships and finally 4) the outcomes and further developments after the conclusion of the project. The last item is the one that we will focus on in this paper. It is important to highlight that we have encouraged interviewees to talk about the relationships developed after the project, concrete situations that they experienced, events, incidents, possible conflicts and problem-solving during the project that had affected the relationships afterwards, the perception about all actors involved were also reported. The main objective was to get a holistic explanation both in time, scope and space not only in respect to what activities the organizations performed, but also what were the outcomes of the collaboration both in terms of technological development and market positioning as well as the relationships among partners.

To complement the primary data, we have used secondary sources such as brochures, videos, reports, articles published in the local and in the international media. That is, the data collected from the interviews were evaluated and checked with the secondary data to assure a high level of validity (Gibbert et al., 2008). The discussion below is based on the information collected from both primary and secondary data. In table 3 (see Appendix C) we provide exact quotes from the interviews and from these quotes we develop our insights, linking them to the theoretical background used in this paper. Our analysis has followed an abductive process, moving back and forth between data and theory (Van Mannen et al., 2007). We followed a processual analysis with the objective of delivering a holistic explanation of forces shaping the context, actions, process and outcomes (Pettigrew, 1997). Below, we will start by defining the product and its complexity and then the stories will be described in more detail, showing situations of cooperation and competition.

Solution as a product

Before describing the case, it is valuable to show what products are developed by the different companies. This will help the understanding of how relationships can move from cooperation to competition in both vertical and horizontal relationships. Initially, it is important to stress that all companies studied use a *solution* message on their homepages instead of describing the product itself. To simplify, we consider products here as technological solutions. The solutions are composition of different pieces of knowledge that are brought together and adapted to satisfy different customer needs.

Firms know that one company alone cannot provide the whole solution and for that reason they search for those that complement and support each other. Firms pursuing innovative projects look for partners to create new solutions and capabilities to enhance their innovation outcome (Sampson, 2007).

In this study, the product of interest is an ICT (Information Communication Technology) solution that involves a mobile broadband module, a chip for connectivity and a software development. The solution can be adjusted to different needs. A customer may buy a solution containing this technology to monitor buses in a city, or weather conditions in a country, or perhaps to track a shipment of products. All the companies studied demonstrate that somehow they are able to offer the *solution* as part of their business portfolio, but then they seek partners to compose the other parts of the solution.

COOPERATION AND COMPETITION IN THE EMPIRICAL SETTING

The relationship between Ericsson and Vivo

Ericsson and Vivo are two multinational companies operating in the Brazilian market. Ericsson is a well-known multinational, headquartered in Sweden, whose business is mobile and fixed network infrastructures, multimedia solutions and telecom services. The company envisions being the prime driver in an all communicating world. Ericsson strategic message is to connect 50 billion “things” by 2020 (Ericsson Annual Report, 2013). In 2012, the firm opened, in Brazil, an IT (Information Technology) research center with focus on transport and security involving broadband and e-cloud. Ericsson’s main clients are the telecom operators and it strategically works closely with them. Vivo has for several years been one of the local telecom partners of Ericsson in Brazil.

Vivo - the Brazilian unit of the Spanish group Telefonica - is the largest mobile operator in the country. By offering a vast range of telecommunication and broadband services, Vivo has achieved 91 million subscribers throughout the country. As an example, but not limited to one telecom operator, Ericsson and Vivo have worked together in different projects in Brazil such as the Amazon project in which connectivity was implemented in rural areas and the buses of Curitiba in which 3G connectivity was applied in the city’s public transportation (see Figure 2). The latter project was successfully launched in 2012, benefiting 3.2 million citizens of Curitiba from an electronic ticketing and fleet management system enabled by mobile. It was the first business case involving public transportation and ICT (information communication technology) solution.

The connected buses project was recognized by the United Nations (UNFCCC) as an innovative transport solution while the Amazon case received the 2013 World Congress Award for best product, initiative or service in emerging markets. Those awards enhanced both companies’ branding and recognition for being a provider for connecting machines

(M2M (machine-to-machine) technology; or the internet of things). Vivo's regional sales manager mentions the impact on Vivo's brand awareness before and after the projects: "*Vivo was the last telecom operator to offer the connection between machines (M2M) however today it has become the number one in terms of quality and connectivity*".

Acknowledged by the business community as well as by UNFCCC, the project opened up a room of new business opportunities for both companies and new possibilities for future collaboration.

After the Buses of Curitiba, the companies together developed a project named "Connect to Learning", which aims towards the insertion of broadband connections in public schools located in 'Vila Cruzeiro' – a poor community in Rio de Janeiro. "*Vivo's objective today is not only being recognized by a telecom operator but also as a provider of M2M solution*", says the regional sales manager. It is also stressed that the creation of the Telefonica Digital was considered as a water division in this matter.

Recently, Ericsson was selected by Vivo to be the supplier of its 4G network in the North and Mid-Western regions of Brazil while Huawei will be its main partner for the south and northeast of the country. It seems that the partnership is still ongoing, as one can see both companies accumulate successful stories with regards to collaboration. In the following section, however, we will describe a situation in which both cooperation and competition occur in a business relationship.

When cooperation turns to competition

In the beginning of 2013, Vivo launched the Vivo Clima project with the aim to implement a pluviometric data collection network. A pluviometer is an instrument for measuring the amount of precipitation at a given location over a specified period of time. The new technology will allow the warning and monitoring system of extreme meteorological events. The rain season in Brazil is characterized by dangerous weather events that can cause natural disasters such as flooding, landslides and the collapse of buildings.

By sending the pluviometric data in real time to Vivo's platforms, the company will be able to protect people who live in risk areas by informing them about the weather conditions and the risk of flooding. At this point, the local authorities would be the main client interested in the product/service. As one of the main collaborators of Vivo, Ericsson was invited to be a partner. Both companies started to develop the technology and the project for a common purpose; that is, to enhance the message that technology has a positive impact on people's lives. Again, it seems to be a new project to enhance branding as well as the possibility for new joint projects involving the two multinationals, targeting local government authorities that might be interested in the technology. However, in the middle of the project Vivo was able to provide the full technological solution and Ericsson left the partnership.

The problem was when the hub of the Telefonica Digital started to operate in Brazil. Telefonica had previously developed the technology supplied by Ericsson. According to the Sustainability Consultant at Vivo, the company had the technology for connectivity via chip while both Vivo and Ericsson had the platform. That is, Vivo had the whole infrastructure. Vivo's Sustainability Consultant explains that this does not necessarily mean that Ericsson and Vivo will not work together in the near future. The consultant claims that both companies have a good communication and they are always talking to each other in searching for collaboration. The consultant affirms that the companies know each other and both believe in the same values (see Table 3 in Appendix C). However, it seems that the Telefonica Digital Hub whose aim is to deliver products and services in B2B, B2C and B2B2C in a number of

ways (such as future communications, machine-to-machine, financial services, media services, cloud computing and information security), appears to be also a competitor for Ericsson in some specific technological domain.

At the moment Vivo has implemented 1500 pluviometers after signing a contract with the Ministry of Science and Technology together with the National Center of Natural Disasters Monitoring (CEMADEN). In the meantime, Ericsson recently launched the Ericsson Micro Weather in the US, which seems to be a similar project to that which Vivo has launched in Brazil. Ericsson’s micro weather was also presented at the Mobile World Congress in Barcelona. It might be that the companies have developed a similar product and compete in this specific segment. Interestingly, Vivo seems to follow Ericsson’s strategy with respect to branding. Vivo has submitted the project to UNFCCC, aiming to increase visibility and brand awareness.

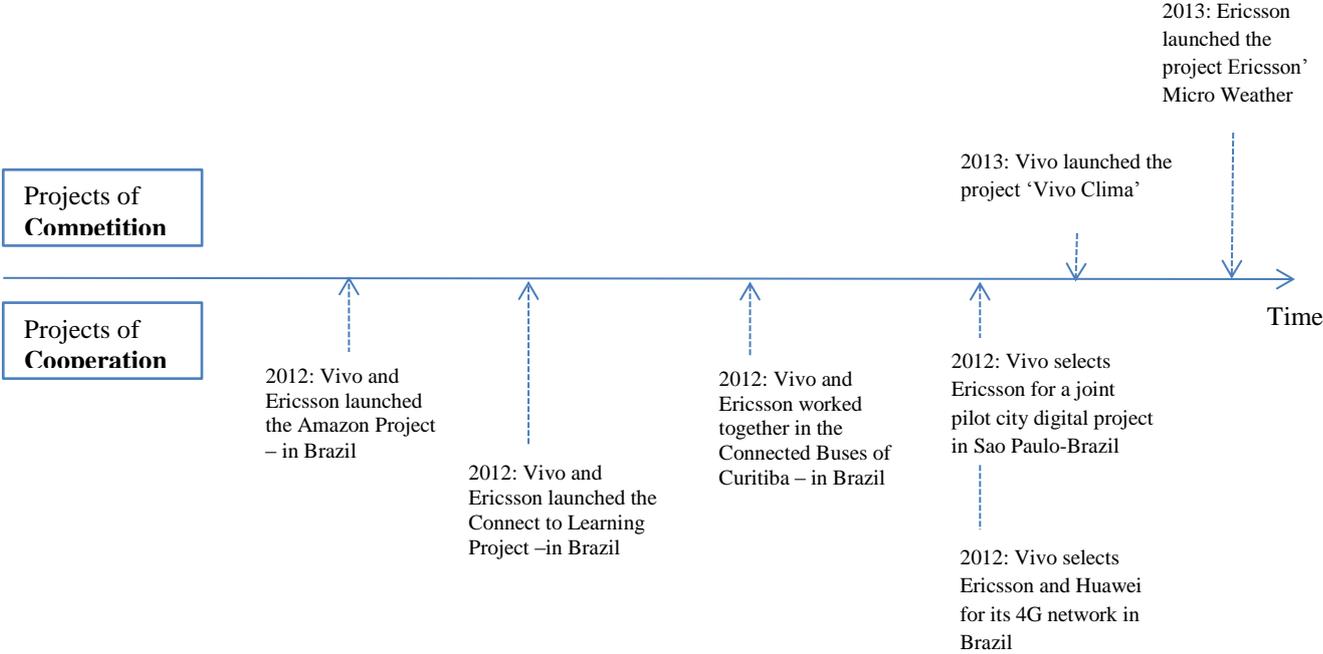


Figure 2: Evolution from cooperation to competition between Ericsson and Vivo

The Relationship between Ericsson and Dataprom

The second case describes how Ericsson has worked together with Dataprom in the development of a solution for the public transportation in the city of Curitiba, the capital of the southern state of Paraná.

With the aim of improving the public transportation service for Curitiba, URBS – a state-owned company responsible for the operation, supervision and transit system of the city (99% of URBS belongs to Curitiba City Hall) identified the need for a software development that allow transmission of data through wireless communication. The aim was to implement a 3G

technology in the city's buses along with the development of an operational control center (OCC) that could permit monitoring in real time. The idea was to have a bus connected to the OCC and also with different type of devices. The devices would be cameras in the bus stations, cameras in the buses and passenger's card reader. The strategy was to increase the flow of information between devices and increase URBS transit and transport monitoring. The starting point was to adjust partially to the prevalent technology. One of the main services of URBS was the electronic ticketing developed by Dataprom and implemented in 2001.

Dataprom is a Brazilian company with headquarters in Curitiba since 1988. The company conducts research, development and production of hardware and software for electronic ticketing, fleet management, and other solutions for urban mobility. The company has offices in several countries in Latin America, and their main clients are the public sector. Dataprom has won some of URBS' public bidding and therefore they have been a URBS supplier in several projects. In the meantime, the telecom operator Vivo was chosen in order to provide the connectivity while Ericsson provided its F3607gw mobile broadband module with embedded GPS capabilities. Through Ericsson module, Vivo could offer service such as remote manageability, security updates and asset protection and bus tracking.

Initially the project started by replacing the old Dataprom equipment by new ones that had an embedded SIM (Subscriber Identity Module) card allowing connectivity. However, the SIM card alone did not work and there were several communication problems between OCC and the buses. The connectivity was lost several times during the day. The main problem was that Vivo's SIM card was being used in unstable conditions with the device being exposed to impacts during the bus travel. This caused data loss and malfunctioning of the system with some travel delays and an increase in passengers complains. To solve the problem it was necessary to have a system operating in a more stable and friendly environment which was only achieved by introduction of Ericsson' module. All the partners needed to adjust their previous technology. Originally, the modules were developed for notebooks and this was the first time it had been installed in buses.

In 2012, the project was successfully launched benefiting the citizens of Curitiba with an electronic ticketing and fleet management system enabled by mobile broadband. For URBS the main achievement with the implementation of the solution (3G) was the flow of information that now is done in real time through connected devices. Via OCC, URBS monitors streets, bus stations and transit 24 hours per day and 7 days a week increasing passengers' security. The solution also expanded the possibility for users to recharge their monthly card through the internet. In the old system there were only 100 platforms for recharging. This resulted in more satisfaction and better convenience for the citizens of Curitiba who are now able to plan their travel in an easier and more reliable way. With improvements in the broadband coverage implemented by Vivo, public places have now free wireless connections.

After this project, several new business opportunities appeared. Dataprom has replicated a similar transportation system in Bogota (Colombia) and Manaus (in the Amazon area, Brazil) while Ericsson has implemented a similar transport solution in Serbia (see Figure 3). However, neither of the projects involved the two companies in a collaboration process. It is important to highlight that even though the companies do not compete in the Serbian market they compete in Colombia where both have business.

When cooperation turns to competition

When the project was in process of development in 2010, Ericsson and Dataprom stated publicly the importance of the collaboration to find an innovative solution for a complex issue

such as urban mobility (see Table 4 in Appendix D). Both recognize future business opportunities that the project could bring to them as well as they emphasize how technology can benefit the transportation industry that both companies target for. Ericsson's Vice President Unit Brazil, Eduardo Ricotta affirms that:

'Mobile broadband is becoming increasingly important to transportation companies because advanced communications can make them all more efficient, safer and greener. The partnership with Dataprom opens up new opportunities for us in a rapidly growing market'

In the meantime the Commercial Director at Dataprom, Alexei Rodrigues reaffirms (see Table 4 in Appendix D) the statement above and the importance of collaboration by saying that:

*'We are driving machine-to-machine adoption in the public transportation sector in Brazil. **With Ericsson's expertise and mobile broadband solutions**, our customers can easily manage their fleets and develop applications that can help them in their daily operations'*

Their words can be found in the Ericsson Homepage Press Release when the project was in process of development. However, when asked recently about the partnership between the two companies, Dataprom's Engagement Manager affirms that the relationship was not that good for them and a bit unstable. When explaining the main reasons for such affirmation he said that in the development of the partnership Ericsson tends to be more aggressive. *'Ericsson sometimes invites Dataprom to collaborate but not as just a supplier offering the Ericsson's modules but wishing to be the partner in the whole processes'*. Hence, he commented that the company wanted to participate in the whole process and share the deal. In other words, instead of being a supplier, Ericsson wanted to participate in the negotiation from the beginning to the end; and in certain situations the company behaved even as a competitor. For that reason, when they think about partnership, they prefer Telit – an Italian company for wireless solution - instead of the Swedish Ericsson.

Further, he declared that there were situations when Dataprom had visited clients and Ericsson was there offering the same electronic ticketing. The electronic ticketing was developed in the joint project that involved Ericsson, Vivo and Dataprom. For that reason, Dataprom's Engagement Manager thinks it is unlikely that Dataprom will cooperate with Ericsson in future – but it depends. As he says, they will cooperate *'if Ericsson brings the deal to us but not the other way round'*. It will be analyzed from case to case whether it is good for Dataprom, he explains.

When asked about the importance of trust in the development of relationships for Dataprom, most of the managers agreed that trust should be taken into account. However, the Sales Executive Manager affirmed that: *'There is never 100% of trust in the partnership. We are always worried about opportunistic behavior'*. He emphasized that: *'In collaboration, there is always an uncertainty; risks associated even when we know quite well who is collaborating with us'*.

In terms of the existence of competitors in the collaboration, the Marketing Management at Dataprom explains that in public projects there are always competitors that they should be able to work with. *'When we sign a contract after public project bidding it is common to have competitors as partners. Companies know that it is not possible to win everything alone'*.

The timeline of the interaction between Ericsson and Dataprom, Figure 3 (below) depicts the development of the relationship between the firms. In 2012 the relationship starts with the

joint project to develop the transport solution for the public transportation authority in Curitiba. In 2013, when the collaboration has been dissolved the companies started to compete on a similar solution in the local market. It is important to inform that all companies stress in their homepage that they are able to offer the whole solution, however they only develop part of it and invites other companies to compose it.

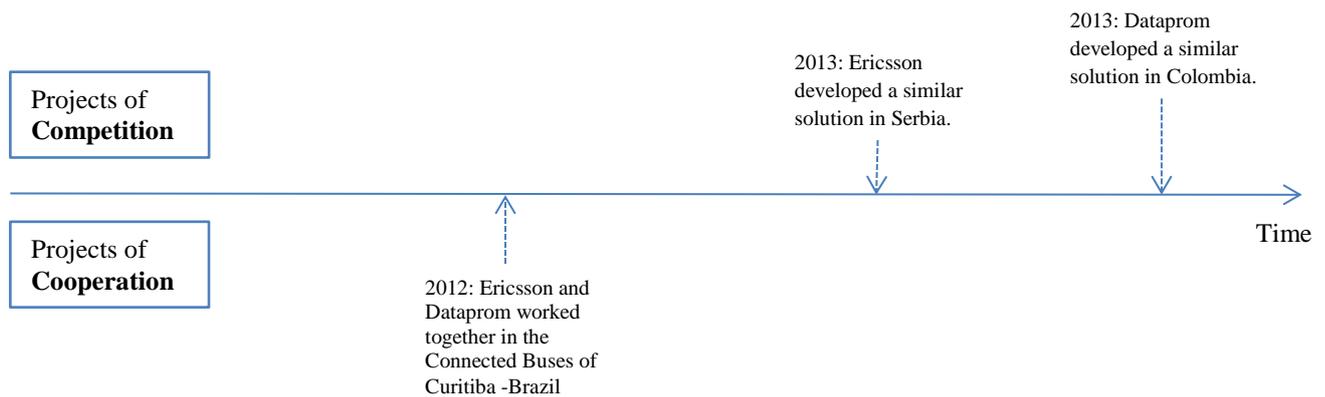


Figure 3: Evolution from cooperation to competition between Ericsson and Dataprom

DISCUSSION

The two stories indicate that even when there is cooperation between two partners, characterized by knowledge about each other, commitment and a certain degree of trust, there are still instances where cooperation turns to competition. Table 3 and 4 (see: Appendix C and D) give an overview of the quotes that specifically concern cooperation and competition in the two examples; the relationship between Ericsson and Vivo, and the relationship between Ericsson and Dataprom.

When asked about the existence of cooperation and competition in the relationship, Ericsson’s Engagement Manager highlights that *“When the portfolio of the company that you aim to cooperate with is big, there is a risk or situations that the partner might become a competitor. That is, they might be a partner in certain areas but competitor in others”*. It appears that “competition” and “cooperation” are two concepts that might walk together in the business world; however, the decision when to cooperate and when to compete depends on the situation. Usually firms envision the final outcome and *“there are also situations when, if the company enters into business alone, it might gain less than if it engages in a partnership, in this case it is better to cooperate”*, says Ericsson’s Manager. This confirms the competition view (see Figure 1) illustrated earlier in this paper. This is also in line with Padula’s and Dagnino’s (2007) arguments that in cooperation firms are expected to meet their goals only partially and therefore elements of cooperation and elements of competition might co-evolve.

In the connected bus project all companies worked together to develop a solution for urban mobility in Curitiba and after the project companies cooperate and compete. It seems that firms compete over resources and client’s attention. The main client in the projects related to urban mobility is the local government. In order to illustrate this, Figure 4 displays two scenarios (4a and 4b). Figure 4a) presents a diagram where the solution is a combination of *pieces of knowledge* produced by Dataprom, Ericsson and Vivo. In this scenario, Dataprom is the one selling the solution to client 1 and bringing Ericsson and Vivo to collaborate on the final product. Thus, they are suppliers of Dataprom. The three companies worked together to deliver the final product therefore they are considered partners.

In figure 4b) we display a second scenario where Ericsson is the one prospecting the business and providing the solution as a whole for the same client 1. Ericsson could in principal invite Dataprom and Vivo to be partners which would still qualify as a cooperation relation between these companies. However, instead Ericsson invites a new partner (company D) to work on the development of the solution. In this case, Ericsson and Dataprom are placed in competition. Or using a better classification they are in coepetition, based on the definition developed previously in this paper. Some questions may arise for instance; what encourages company B to choose a partner different from company A? Or what motivates them to compete instead of cooperate? What level of tensions may exist in such relationships?

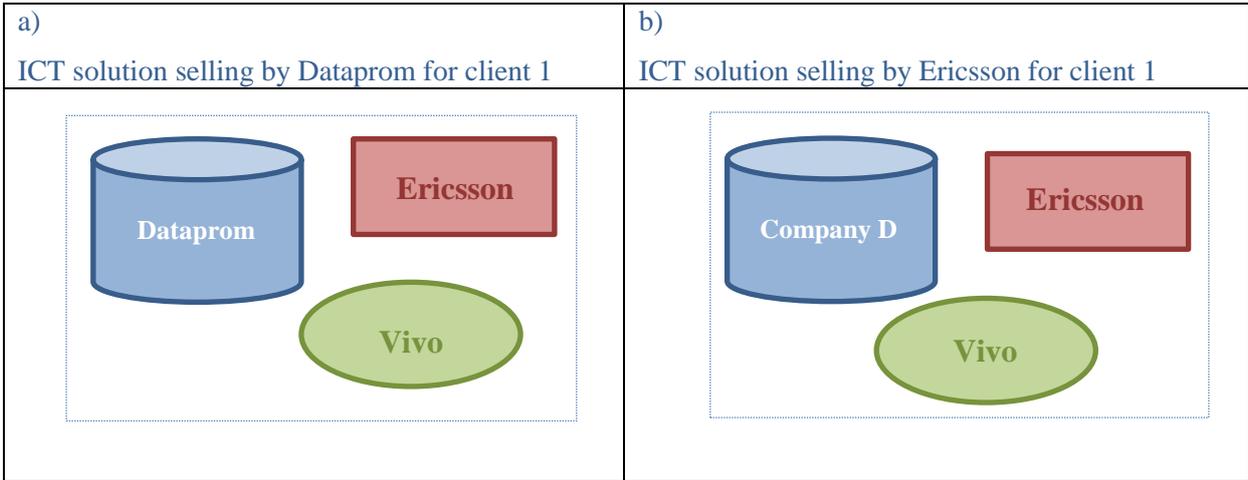


Figure 4: Competition occur in the different combination of pieces of the solution

When Dataprom’s Engagement Manager confirms that Ericsson sometimes invites Dataprom to work together, this suggests that when Ericsson is the project owner, or has sold the solution to a certain client, Ericsson has the right to choose which partner will work as a supplier on the solution. This clearly implies that the companies cooperate in assembling the technological solution, but compete when selling it – depending on who the leader of the project is. It is clear that the case shows that firms sometimes cooperate and sometimes compete; suggesting again a state of coepetition. The aspect of the leader of the project or the company who successfully have sold it to a client implies that actors play different roles in the network; sometimes being a partner and sometimes a competitor.

An interesting aspect is that after the project was finished, all companies used a solution message on their homepage instead of describing the product itself. It is an interesting way of framing the firm’s offer since it shows how an organization will, for instance, help to solve a problem or enable a customer to improve a service. This also indicates a certain degree of complexity in terms of the solution as a whole, since the firms’ message implies that they are

able to deliver the final solution to the client without necessarily explaining that they need to bring other partners' piece of knowledge or technological know-how.

By looking at companies' messages on their homepages, it is difficult to distinguish whether they only develop or contribute to part of the solution. For example, the connectivity is only delivered by the telecom operator since it is a characteristic of a telecom company. In the telecom industry, operators are required to have special agreements for broadband frequency for instance. Thus, only this kind of company may deliver connectivity, not a company like Ericsson or Dataprom.

It is essential to highlight that the aspects of horizontal and vertical relationships in the stories described are diffuse. If we consider the leader of the project, it is not easy to distinguish which company takes the place as supplier or customer. Depending on the innovation or solution created, the boundary between horizontal and vertical relationships might be blurry. Thus, an actor's role in the network may be equally blurry, meaning that what firms *compete for* may differ; whether it is resources, customer attention, or something completely different.

In the relationship between Ericsson and Dataprom, it appears that the level of trust might be lower than in the relationship between Ericsson and Vivo, but the cooperation might still be interesting if both sides can gain. Despite the uncertainty involved, Dataprom might accept to be a partner if the outcome for the firm is better than for the decision not to cooperate. In table 3 (Appendix C), this can be seen in the quote related to tensions associated with competition, i.e. when Dataprom states that they will work with Ericsson if Ericsson brings the deal to them. It is clear that the level of tensions is higher in the relationship between Ericsson and Dataprom than between Ericsson and Vivo. This can be explained by the profile of the companies. It is important to stress that Ericsson and Dataprom work in the same geographic and product market in respect to fleet management and traffic management. They both work in Brazil and Latin America. This is in line with Chen's (1996) findings that when firms are similar, work in the same market, and offer a similar product they meet in direct competition to a higher extent.

CONCLUDING REMARKS

The objective of the paper was to answer the question of how and why partners begin to compete. By looking at the concept of resource combination, and especially the combination of complementary versus similar resources, it can be seen that firms with complementary resources will gain from cooperating. For instance, when Ericsson and Vivo first started cooperating, they also developed new technology together, while taking advantage of each other's different resource bases. As Vivo learnt about the technology, they were no longer dependent on Ericsson when selling similar products to other customers.

As Ericsson learnt from Dataprom, the company preferred to add the traffic management and traffic information to its business portfolio and offer to the market themselves instead of having Dataprom as partner for that solution. Ericsson became Dataprom's competitor in this specific domain (software and hardware for urban mobility solutions), even though Ericsson's business portfolio is far bigger than Dataprom's. For instance, both companies aim to get government attention in projects for urban mobility in Brazil. Thus, when firms have developed similar knowledge, there is less incentive to cooperate.

We would like to end this paper by outlining some preliminary findings. *Firstly*, developing long-term relationships with their main clients is part of Ericsson's Global Strategy. Ericsson's business model is based on business-to-business relationships, and the company is one of the main suppliers for telecom operators. Telecom operators, in this case

Vivo, are more concentrated on business-to-consumers. Thus, supporting the business of the telecom has a direct impact on Ericsson's performance. In other words, by communicating to customers, Ericsson encourages indirect consumption of its products, since the final consumer will look for the telecom services where Ericsson is the supplier. Therefore, Ericsson promotes projects and partnerships which contribute to enhance its message that technology has a positive impact on people's life. By doing that, Ericsson communicates to the whole business community, consumers and government how the technology can impact economy, society and the environment as a whole. One of its main corporate messages is *Technology for Good*.

When asked about the partnership with the Telecoms in Brazil, the Sustainability Analyst at Ericsson emphasizes that the partnerships are strong: *'Developing relationships with the local telecom is very important to Ericsson because it leverages future business opportunities for us'*. The relationships tend to be more customer-supplier relationships than the other way round and they are characterized by a certain degree of interdependence that might entail a more cooperative strategy. It seems like the partners complement each other in finding new solutions.

Secondly, in the case of the Ericsson and Dataprom relationship, it is clear that the partnership was important for the development of a specific solution, but after the project was finished, the possibility for cooperation decreased. Competition among actors and a low level of interdependence might explain this phenomenon. The Ericsson Sustainability Report released in April, 2014 clearly states that the company, in the domain of using ICT to improve urban infrastructure, provides solutions for traffic management and traffic information for the public sector. These systems are not limited to the Dataprom solution. The report confirms that Ericsson and Dataprom became competitors. That is, after the project Ericsson seems to have appropriated and exploited parts of Dataprom's knowledge for urban mobility.

As Ericsson learnt about the technology, the degree of interdependence between them decreased, leading to a decrease in the necessity for cooperation. The implication is that the higher the effect of complementarity or interdependence, the higher the likelihood for developing a more cooperative strategy. In contrast, the lower the effect of interdependence, the higher the degree of competition resulting in partners choosing a competitive strategy instead.

Thirdly, the level of relationship tensions is different between the two relationships presented. Ericsson's relationship with the Telecom operator Vivo shows a lower degree of tension in comparison to their relationship with Dataprom. It is important to emphasize, however, that the telecom operators depend on the network infrastructure developed by Ericsson. The more the telecoms expand their business, the greater the probability that Ericsson's business will expand as well; and this occurs in areas where they complement each other. In this case, they are likely to search for joint projects that benefit each other. However, there are situations where competition could occur even when previous knowledge, trust and commitment exist in the relationship. In that circumstance, if partners recognize an overlap of skills and perceive that they can gain more from competing than cooperating, the former alternative could be their first choice.

Finally, it seems like the interplay between competition and cooperation requires managers to be able to minimize tensions between their firm and its counterparts in order to develop a cooperative strategy. There are thus a number of managerial challenges of first identifying business opportunities, and then achieving a suitable balance between cooperation and competition in buyer-supplier relationships.

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Appendix A

In table 1 below, we provide the main differences between the cooperative paradigm and the competitive paradigm

Table 1: Differences between cooperative paradigm and competitive paradigm

Cooperative Approach	Competitive Approach
Interdependence (Deutsch, 2006)	Lack of interdependence or independence (Deutsch, 2006)
Presence of heterogeneity in terms of: Resources, skills, capabilities, activities might <i>complement</i> each other (Hess' & Rothaermel, 2011).	Presence of certain homogeneity in terms of: Resource, skills, capabilities, activities, industry-specific common knowledge might be <i>substitute</i> if they focus on the same value chain (Gnyawali & Park, 2009).
Relational orientation (Håkansson et al., 2009)	Transactional orientation (Porter, 1991)
Typically it is non-economic in nature and based on value creation and sharing (Anderson & Narus, 2004)	Typically it is economic in nature and based on value creation, exploration but no sharing.
Emphasis on <i>mutual benefits</i> (Håkansson et al, 2009)	Emphasis on <i>self-interest or individualism</i> (Porter, 1980)
Collective Interests - The performance of one firm is positively associated with the performance generated by the other firm (Powell et al, 1996).	Private Interests - Firm explore resources more efficiently than other firms will have higher economic rents (Porter, 1991).
Cooperation raise a process of social-exchange that encourage commitment and trust building	A self-oriented behavior do not lead social exchange
<i>Convergent</i> goals	<i>Divergent</i> goals

Appendix B

Table 2: The distribution of the interviews

Company	Number of interviews	Function	Interview per function
Ericsson	10	Manager	6
		Head of Department	2
		Analyst	2
Vivo	9	Manager	3
		Regional Director	1
		Consultant	3
Dataprom	6	Manager	4
		Sale Representative	1
Total	25		

* At Dataprom, we have performed two interviews with the same manager

Appendix C

In table 3 below, we provide exact quotes from the interview and from these quotes we develop our insights, linking them to the theoretical background used in this paper.

Table 3: The duality between cooperation and competition

Quotes from the interviews	
- When technology (skills) become substitute	“Vivo Clima was an initiative of Vivo and it started through cooperation between us and Ericsson however in the middle of the project we had developed our own technology and Ericsson left from this specific cooperation”[Consultant of CSR Issues, at Vivo]
-When cooperation might become competition	“When the portfolio of the company that you aim to cooperate is big, there is a risk or situations that the partner might become a competitor. That is, they might be a partner in certain areas but competitor in others”[Engagement Manager, at Ericsson]
-When the expected value for cooperation is higher than the expected value for competition.	“There is also situations that if the company enter into the business alone it might gain less than if it engages in a partnership, in this case it is better to cooperate” [Project Manager, at Ericsson]
- The risk of cooperation	“I have been in certain business deal that Ericsson was offering the same solution as me from Dataprom. That is, the electronic thickening. This made the relationship becomes a bit shaken”[Engagement Manager, at Dataprom]
- Tensions associated with coopetition	<p>“We partner if Ericsson bring the deal to Dataprom”- This has happened sometimes”[Engagement Manager, at Dataprom]</p> <p>‘Ericsson sometimes invites Dataprom to collaborate but not as just a supplier offering the Ericsson’s modules but wishing to be the partner in the whole processes’[Engagement Manager, at Dataprom]</p>

Appendix D. Summary quotes from Ericsson news reports

In table 4 below, we provide exact quotes from the interviews released for the media.

Table 4: Ericsson Press Release

Date	Source	Quotes in Press Releases	Drivers
2010-05-18	Ericsson Press Release	"We are driving machine-to-machine adoption in the public transportation sector in Brazil. With Ericsson's expertise and mobile broadband solutions , our customers can easily manage their fleets and develop applications that can help them in their daily operations." [Alexei Rodrigues, Commercial Director, Dataprom] - Project: The Buses of Curitiba	The importance of collaboration
2010-05-18	Ericsson's Homepage – Press Release	"Mobile broadband is becoming increasingly important to transportation companies because advanced communications can make them all more efficient, safer and greener. The partnership with Dataprom opens up new opportunities for us in a rapidly growing market. " [Eduardo Ricotta, Vice-President Customer Unit Brazil, Ericsson, Project: The Buses of Curitiba]	Business Opportunities
2012-06-21	Ericsson's Homepage – Press Release	"The connectivity offered in this partnership will give greater potential for Internet usage in the schools" [Luciene Dias, Regional Director, Telefônica Vivo] - Project Connect to Learn.	The connectivity is part of the solution
2013-11-19	Ericsson's Homepage – Press Release	"Mobile communication is expected to reach 9 billion subscriptions by 2019. This would never happen without unity and collaboration across the entire ecosystem . We need a similar drive now that we will see industries such as transport take advantage of mobility, broadband, and cloud. We've seen wonderful innovations by leading companies but in order for these ideas to scale across the globe, we need to collaborate. "[Hans Vasteberg, CEO at Ericsson]	Complex issue such as Urban Mobility encourages collaboration