

From the boundaries of management to the management of boundaries: business processes, capabilities and negotiations

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Abstract

Purpose – This paper examines some of the new capabilities that are required for the facilitation of business processes management (BPM) in the current political and technological landscape. Specifically, the goal is to investigate the role of firm boundaries, from a business processes perspective, in new contexts in which the affirmation of digitalization requires more integration across a complex network of partners.

Design/methodology/approach – The paper is based on a review of relevant literature on BPM, firm boundaries and negotiation. By critically integrating this literature, a framework is developed with the objective of supporting the management of boundaries.

Findings – BPM, new competitive contexts, and the technological landscape require the development and management of boundary capabilities. Among these capabilities, “boundary management” – how managers coordinate resources, activities and business processes on the boundaries of the firm – should play a key role. Moreover, as managers must continuously interact with multiple partners in digital supply chains, the organizational model of negotiation serves as a means of effectively managing firm boundaries.

Practical implications – Our framework offers insights and guidelines that can help practitioners manage the boundaries of business processes. We encourage a focus on business processes occurring at firm boundaries. Furthermore, we encourage the development of new capabilities in response to the needs of practitioners to ensure best practices of negotiation.

Originality/value – This study shifts the emphasis of BPM from the boundaries of management to the management of boundaries. By shedding light on new capabilities required, this paper enriches the BPM literature and can assist, on the one hand, in reconfiguring business processes in the new political and technological landscape and, on the other hand, in facilitating effective negotiation.

Keywords: business processes management, digitalization, boundary management, boundary capabilities, partnership, negotiation.

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1. INTRODUCTION

New competitive contexts, digital innovations, and big data analytics present a continuous stimulus to renew sources of competitive advantage (Fosso Wamba and Misha, 2017). Markets are currently witnessing a rapid increase in digital infrastructures and network dynamics (Karmarkar et al., 2015). Similarly, the Internet of Things (IoT) is having a pivotal impact on manufacturing systems (Caputo et al., 2016). Digitalization affects several aspects of business, including business supply chains and operations, pushing firms towards the use of new “sharing economy” business models (BCG, 2015; Cohen and Kietzmann, 2014; Holweg and Helo, 2014; Roden et al., 2017; Sundararajan, 2013; WEF, 2016). We witness a constant physicalization of what used to be the digital world, with tech companies often looking to give a physical dimension to their services, and a digitalization of what used to be the physical world, with traditional companies digitalizing products and services that used to need a physical space. Such trends have been so powerful that nowadays a clear distinction between the two worlds makes every day less sense (Capurro et al., 2018; Davenport and Ronanki, 2018).

These trends can enhance supply chain flexibility to increase the quality of production while shortening delivery times to more quickly address variations in product demand and to reduce crossing times while ensuring necessary stocks by partnering with flexible suppliers. At the same time, digitalization should increase levels of production efficiency to reduce production costs while optimizing immobilized capital such that plants can be used properly while minimizing inventories by employing systems that can streamline information flows. Indeed, firms can limit risks by sharing processes and activities to reduce risks of flow interruption along the supply chain, minimizing operational risks contingent on operating costs (Fiorentino, 2016). The affirmation of digitalization spurs new interactions between companies and between companies and customers (Rosenzweig, 2009). In digital supply chains, the development of information technologies and digital infrastructures render it possible to share large volumes of data and information that, on the one hand, offer considerable opportunities but, on the other hand, present problems related to their organization and correct use (Capgemini, 2011; Kumar et al., 2016; Papadopoulos et al., 2017).

While it is clear that digital technologies will transform business processes, there are a number of challenges that firms must address. These challenges must be addressed by managers and executives. For example, Michelin – a leader in the tire industry - has advanced a comprehensive ecosystem that involves the use of sophisticated telematics and an optimized tire management system that orients logics of business processes towards “service models”. However, while this approach was developed internally, Michelin identified a need to partner, especially in the field of big data analytics.

In such contexts, BPM will increasingly involve more integration across a complex network of partners (D'Aveni, 2015; Mindruta et al., 2016; PWC, 2016). The relevance of network models and of the development of digital society stresses business process management at firm boundaries (Schotter et al., 2017). Boundaries are defined transitional areas between inside and outside (Hakansson and Shehota, 1989). Business models currently include a "border area" in which it is not easy to distinguish firms from the external environment (Spring and Araujo, 2014). These boundaries circumscribe resources and capabilities over which firms extend their governance and control (Pfeffer and Salancik, 1978). Basic criteria used for the identification of firm boundaries (Sarkis, 2012) can be determined from a firm's system of governance, whereas "instrumental roles" useful for understanding the strength and extent of said actions can be attributed to other factors such as legal (Coase, 1937; Williamson, 1975), physical (Scott, 2003), communication and organizational elements (Weber, 2002).

Therefore, the ability of the firm to consistently negotiate within and beyond its boundaries serves as an important strategic driver in achieving and sustaining a competitive advantage (Brown and Duguid, 1998; Drori et al., 2013). Negotiation is commonly defined in the relevant literature as a process through which two or more parties reach a required joint decision while having different preferences (e.g., Rubin and Brown, 1975; Zartman, 1977; Fisher et al., 1981; Pruitt, 1981; Lax and Sebenius, 1986; Raiffa et al., 2002; Caputo, 2016). Due to the interdependence that reigns over and within multi-actor decision processes (Thompson, 1967), negotiation outcomes are affected by all decisions made by parties involved. According to this perspective, the case of Lego – the toy company – is an illustrative one. The company, from the launch of its “Lego Mindstorms”, has had to manage new interactions with customers since the product also became successful among adult enthusiasts of mechanics and robotics. Fans gather on the AFOL (Adult Fans of Lego) online community and propose reprogramming sensors and control systems as custom versions of the Mindstorm software and as improvements to Lego's products. Initially, the company considered acting legally against its customers, but after some initial disruption, it decided not to limit the creativity of its fans, which had the potential to stimulate firm creativity and innovation. Since 2004, the company has decided to negotiate with its customers and to develop a new line of Mindstorm robots in collaboration with fans in the design of a new product through a platform (Lego Digital Designer), a software program that allows fans to virtually create their own Lego projects and to share their creations on the Internet. From this experience, Lego has entered a new digital business arena (e.g., film and video games) (Lakhani et al., 2013). Effectively improving upon negotiation capacities is crucial in managerial, political, and business contexts.

However, the current literature in terms of strategies, operations management and negotiation seems to overlook the role of boundary management and negotiation in the organizational capabilities of the firm (Borbély and Caputo, 2017a). Prior studies merely highlight the role of firm boundaries in BPM (Fiorentino, 2016) and define boundary management as the negotiation of knowledge (Roberts and Beamish, 2017). As supply chain management is predominantly represented through relationship management, critical issues involve managing relationships between processes, activities and people (Luvison and de Man, 2015; Niesten and Jolink, 2015). Thus, scholars and practitioners must identify ways to face such issues. From calls for what new capabilities are required in terms of business process management, this study investigates the role of boundaries in the new political and technological landscape from a business process perspective. Specifically, to achieve systematic conceptualization, we advance a framework of business processes management (BPM) based on a critical review of boundary capabilities, that allows to further our understanding of the overlap among digitalization, boundary management and negotiation.

This conceptual article contributes to the fields of BPM, strategy and negotiation by bridging a pool of concepts and frameworks that thus far have been limited to the specificities of their original field. Moreover, the paper makes a theoretical contribution by advancing knowledge through the systematization and rationalization of studies focused on boundary management and through the development of a conceptual framework for boundary capabilities. Finally, the managerial and theoretical implications of this framework shift the focus from the boundaries of management to the management of boundaries, in which negotiation capabilities play a key role.

This paper is structured as follows. Section 2 presents a theoretical background on firm boundaries. Section 3 analyses the role of boundary management as a key to supporting business process management in new competitive contexts. Section 4 advances an organizational model of negotiation for effectively managing firm boundaries. Finally, Section 5 summarizes the main contributions of the paper and presents the study's implications and avenues for future research.

2. THEORETICAL UNDERPINNINGS OF FIRM BOUNDARIES

Boundaries have been analysed by scholars of economics, management and organizational behaviour (Villalonga and McGahan, 2005). Traditional theories such as those of “transaction cost economics” and “resource-based views” generally investigate boundaries through a “make or buy” lens (Barney, 1991; Coase, 1937; Williamson, 1975). Transaction cost economics (TCE) focuses on the benefits and costs of managing activities within or outside of boundaries. The resource-based view (RBV) suggests that the analysis of boundaries should encompass the traditional dichotomy between benefits and costs to integrate the analysis of resources with capabilities development. These theories have

been recently developed based on the evolution of competitive and technological landscapes that necessitate collaborative decision-making in resource, knowledge and business process management (Foss, 1996; Milgrom and Roberts, 1990; Parmigiani and Mitchell, 2009; Santos and Heisenhardt, 2005; Tortoriello and Krackhardt, 2010).

The resource-based view of the firm serves an explanation for the management of boundaries and for the role of negotiations in this process. The RBV seeks to understand how competitive advantage is created and sustained over time by focusing on the internal organization of firms (Wernerfelt, 1984; Prahalad et al., 1990; Barney, 1991; Nelson, 1991; Peteraf, 1993) rather than stressing industry structures and firms' positioning within a given industry (Porter, 1979; Hatten et al., 1978). The conceptualization of firms as clusters of resources heterogeneously distributed across firms is the underlying assumption of the RBV (Newbert, 2007; Wernerfelt, 1984).

The literature of this area argues that when through development or acquisition a firm possesses resources that are valuable, inimitable, rare, and non-substitutable, a competitive advantage can be achieved and sustained. This allows the firm to implement value-creating and difficult-to-duplicate strategies (Allred et al., 2011; Barney, 1991; Nelson, 1991; Peteraf, 1993; Wernerfelt, 1984). Dynamism has been included by Teece et al. (1997) into the RBV, highlighting that most environments in which firms compete are dynamic. This suggests that the structure of an industry evolves at different rates and that the ways in which companies achieve a competitive advantage in dynamic environments cannot be explained by a static approach to the RBV. Instead, firms with dynamic capabilities outperform their competition, as they can "integrate, build, and reconfigure internal and external competencies to address rapidly changing environments" (Teece et al., 1997, p. 516).

The literature on dynamic capabilities has developed and expanded, often in different directions (Mintzberg et al., 1998; Williamson, 1996) with no agreement on the definition of the term "capabilities" and, as a consequence, with a certain degree of heterogeneity in terminology used (Hine et al., 2014). In their seminal article Eisenhardt and Martin (2000) claimed that dynamic capabilities actually consist of identifiable and specific routines. Some integrate resources, such as product development routines (e.g., Toyota). Strategic decision-making is considered a dynamic capability whereby "managers pool their various business, functional, and personal expertise to make the choices that shape the major strategic moves of the firm" (Eisenhardt and Martin 2000, p.1107). Other routines involve retaining and releasing resources (e.g., knowledge creation or alliance and acquisition capabilities) (Eisenhardt and Martin, 2000). Finally, others relate to the reconfiguration of resources within a firm via transfer, resource allocation, and synergistic processes. Dynamic capabilities developed from the path-dependent histories of individual firms are characterized as

unique and idiosyncratic (Teece et al., 1997) while they also present common features associated with effective processes facilitated across firms (Eisenhardt and Martin, 2000). In this vein, we can configure an organizational capability in negotiating within the dynamic capabilities of boundary management. Wang and Rajagopalan (2015) argue that negotiation can be considered a firm-level ability among a firm's individual-alliance capabilities. Individual alliance capabilities, according to the RBV, can be defined as a firm's ability to search for, negotiate, manage, and terminate an individual alliance (Kale and Singh, 2007; Simonin, 1999; Wang and Rajagopalan, 2015). For this reason, negotiation is considered a stage of the life cycle of an alliance (Wang and Rajagopalan, 2015) and it is defined as a firm's ability to negotiate "the terms and structures of the collaborative agreement" (Simonin 1999, p.1155). Nevertheless, this definition is slightly limited and could benefit from further development, and it is thus developed in this paper.

3. TOWARD A NEW PERSPECTIVE ON FIRM BOUNDARIES

Environmental dynamics currently call for new perspectives on business process management. In this way, the management of boundary processes has become a key variable of new competitive contexts (Adamides, 2015; Foss et al., 2013; Gonzalez-Benito and Lannelongue, 2014; Schmenner et al., 2009; Swink et al., 2007).

Studies are increasingly focusing on firm boundaries as a third alternative over integration and markets, and the joint use of skills and knowledge has highlighted the role of boundary management (Alexander, 1997). Boundary processes embrace the activities through which companies select joint relationships. The boundary concept emerged as a means to analyse activities and processes that can be jointly controlled and influenced by several organizations (Yang et al., 2010). "Control" becomes the criterion used to define where firm boundaries should be placed: "the organization ends where its discretion ends and another begins" (Pfeffer and Salancik, 1978, p. 32). Specifically, boundaries should be viewed as a continuum that represents an intermediate form of hybrid governance in network dynamics, digital innovations and sharing economy perspectives (Normann and Ramirez, 1993; Hakansson and Snehota, 2006). This continuum constitutes a "border area" in which it is not easy to distinguish firms from the external environment. Consequently, it is increasingly becoming necessary to use the concept of boundaries and of the "boundary zone" as a central element of business process management. The management of resources, knowledge and activities along firm boundaries should be used as a new paradigm for obtaining and sustaining a competitive advantage (Dyer and Singh, 1998; Garzella, 2000; Wagner, 2003).

Boundary management should be used to integrate the benefits of internal and external growth strategies (Hargadon, 2002; McEvily and Zaheer, 1999; Steensma and Corley, 2001; Takeishi, 2001).

Scholars have identified advantages of managing business processes in hedging against demand uncertainty and in acquiring and developing new capabilities from partners (Cao and Zhang, 2011; Cassiman and Veugelers, 2006; Parmigiani and Mitchell, 2009). Other studies show that boundary management favours the integration of coordination and flexibility benefits by jointly developing both (Park et al. 2004; Lavie, 2006). Another literature stream focuses on the chance of facing relevant risks in current contexts (e.g., the full outsourcing of key activities by partial outsourcing to enhance resource and knowledge portfolios from relationships with external actors). These findings have caused business process scholars to shift from the analysis of the management of boundaries to the study of boundary management (Blocker et al., 2012; Fiorentino, 2016; Troilo et al., 2009) and have helped managers overcome traditional trade-offs between internal and external processes.

The management of boundaries involves making decisions on “how” to define activities that integrate and interface a firm with the external environment. This approach implies the involvement of several subjects with strategic autonomy and generally affects business processes that cannot be considered fully internal nor fully external. Such management should design and manage business processes based on a broader perspective to identify new integration and coordination opportunities among firms’ value chains and those of external “partners” (Boddy et al., 2000; Pil and Holweg, 2006; Porter, 1987) by “linking” and “bearing” strategies for managing relationships with suppliers and customers (Scott, 2003). Boundary strategies encourage an organization to adopt a win-win approach to the supply chain where each actor collaborates to compete with other chains. Such “linking strategies” seek to internalize the resources and skills of partners. Firms, in pursuing information sharing and the alignment of internal and external business processes, should allow for the innovative redesign of the entire supply chain to satisfy customers more effectively and to improve overall operating efficiency levels. At the same time, however, firms must supervise business processes by developing “bearing” strategies that prevent external actors of the supply chain from acquiring key information through their relationships with the firm. Competitive expectations should lead other parties of boundary operations to promote their own interests at the expense of firm interests.

The management of boundaries is designed to create value by focusing on business processes and activities that occur at firm boundaries. The following section furthers our analysis on the role of boundary management with the aim of identifying capabilities that can support it.

4. THE ROLE OF “BOUNDARY MANAGEMENT”

The adoption of boundary strategies implies that essential decisions have been made to shift the attention of corporate leaders and of strategic management in the business process periphery. Making

the decision to strategically manage boundaries involves first understanding opportunities inherent of this perspective and then considering its effective, efficient and correct implementation.

Boundary strategies contribute specific potential to the strengths that characterize other traditional development models. In contexts in which new communication tools and new ways of governing relationships are established, the choice of bringing to the boundaries the center of the strategy promotes the bearing or linking of strategies and can promote creativity and innovation (Adamides, 2015; Foss et al., 2013; Garzella 2000; Gonzalez-Benito and Lannelongue, 2014; Lorenzoni and Lipparini, 1999; Möller and Halinen, 1999; Parolini 1999; Ritter et al., 2004; Schmenner et al., 2009; Swink et al., 2007; Villalonga and McGahan, 2005).

We also understand that a successful boundary strategy requires the involvement and participation of a plurality of autonomous subjects. The greater autonomy that characterizes boundary elements and resources improves boundary strategies. The choice to focus on resources that are not internal (and that are not even external) favours strategic intent. Strategic creativity derives from individual contributions of subjects and from strategic freedoms for "joint fertilization" and to prefigure a stronger ability to organize innovative actions, the primary source of competitive advantage (Biemans, 1996; Björk and Magnusson, 2009; Fronterre, 1991; Leenders et al., 2003). The company can thus realize an organization capable of ensuring creativity, flexibility and responsiveness (Capaldo, 2007).

However, the decision to share processes with other subjects involves focusing special attention on the management of boundaries. Boundary management thus becomes a cornerstone of boundary strategies. Boundary managers are the guarantors of the consistency of operations. Their goal is to forge balance and harmony between various elements and activities facilitated in the boundary area by combining them effectively and efficiently with internal and external forces to achieve excellence relative to competitors. The importance of management is well recognized; Chandler (1990) has already stated that while a company leads its own life beyond its individual executives and while technological and market requirements limit its development, a company's health and efficiency in meeting its economic functions are almost always dependent on the talent of its managers.

In covering and remaining with this essential function, management personnel attitudes have evolved and boundaries strategies emphasize the importance of governing relational, organizational and technological factors. The skills and professionalism required from management personnel become more complex and articulated. Alongside typically technical knowledge, leadership, communication and relational abilities are emphasized and entrepreneurial attitudes become fundamental (Pearce, 2004).

The ability to capture weak signs, to anticipate the future, to spur innovation and to govern change is a key element of entrepreneurship with increasing enthusiasm for magnanimity (Dyer and Hatch, 2006). Management personnel must be able to manage a system of increasing complexity and of varied factors, giving rise to a harmonious combination capable of interpreting environmental and competitive dynamics. These include intangible factors and IT technologies that have had a considerable impact on management strategies in recent years. The strategic importance of intangible resources depends largely on their limited reproducibility and incremental nature. Here, we refer to the abilities of most immaterial elements to simultaneously produce inputs and outputs of the production process. Most resources are consumed during production while intangible resources, rather than diminishing as a result of their use, when used well enhance or at least retain their potential (Hussi, 2004; Hussi-Ahonen, 2002; Teece, 2000).

Likewise, the establishment of "boundaries" in strategic processes draws attention to the deepening of the role played by information and specifically information technology as a factor that allows for the integration of elements that carry out critical tasks of resource linking and development while facilitating continuous isomorphisms of a given company and environment by means of strategic boundary management in the search for optimal competitive positioning.

The need for a set of technical, mechanical and informatics tools that can support a company's information and knowledge needs has revealed a link between information technologies and information systems (Kern and Willcocks, 2000). Moreover, the study of the development of information technologies and specifically of their applications to the field of business shows how, in addition to offering information support for decisions, they are decisive in the traditional task of automating production processes and more recently in the development of modern and innovative interactions that characterize the relationship between a company and its environment (Powell and Dent, Micallef, 1997; Sher and Lee, 2004).

In any case, it is overwhelming that the management of intangible and relational capital and the strategic use of resources related to information technology are elements that are difficult to spontaneously realize. Their harmonic integration and progressive development within corporate settings must be achieved through wise, careful and forward-looking governance that views management as a privileged actor.

In line with the growing importance of boundary strategies, boundary management teams must express the increasingly urgent need to organize innovative relational systems (Brusoni et al., 2001). This effort must extend beyond classical business boundaries and must interpret new ways of managing processes that move resources from within to boundaries (e.g., issues related to the development of telework) and those that approach resources from the outside (e.g., the creation of

inter-company networks).

The boundary manager is a communications expert who governs, organizes and controls the flow of information. The boundary manager must ensure that corporate communications internally, externally, commercially and operationally support the company's mission and represent its values and culture. The belief that organizations are also supported by and take part in their systematics by sharing a culture and values that are somewhat homogeneous shows how the task of management ends up assuming a significant symbolic-communicational component and how important its leadership talents truly are.

Leadership and communicational skills in turn become indispensable and irreplaceable tools for overcoming conflicting antagonisms and interests and for achieving a convergence of goals that enable more people to interact in the pursuit of common economic goals (Denis et al., 2001; Dhanaraj and Parkhe, 2006; Dyer et al., 2001; Paulraj et al., 2008;).

All of these considerations and the delicate role played by management teams are even more relevant to strategy development and to the governance of boundary relations, which is often characterized by weak links.

The boundary manager must be able to design and organize values, information flows, and operational processes to maximize organizational efficiency while ensuring a high degree of flexibility. Management teams must be able to exploit potentialities of the human system and to allow individuals to develop their creativity and to encourage their participation.

The boundary manager, to render the information system and the circulation of information effective, must organize the flow of information itself in a bidirectional manner to identify weak signals received from inside and outside. The need to deliver creativity and flexibility to the corporate system while maintaining stability implies the need to redefine interpersonal relationships, the role system, and control methods (Chenhall et al., 2011). Increasing levels of complexity require the careful management of organizational dynamics that in the absence of proper government action would end up creating dangerous centrifugal and conflicting situations.

Boundary management must, on the one hand, manage the delicate balance between inter-organizational relations, cooperation and collaboration with organizational repercussions of technological change and cultural evolution lead to and, on the other hand, integrate the various activities to ensure the coherence and harmony of production.

In other words, it must be able to overcome the trade-off resulting from the need to ensure the diversity and variance of the organizational system in promoting its creativity and flexibility, to enhance strategic-organizational development, and to limit the occurrence of centrifugal and

conflicting situations with repercussions on the company's economic viability (Dalton and Lawrence, 1970; D'Aveni, 2015; Dhanaraj and Parkhe, 2006; Kale et al., 2000; Lawrence and Lorsch, 1967).

Typical management and organizational issues of boundary strategies are above all represented by the difficulty of "controlling" organizations and individuals gravitating to the boundary area overtime and representing the strategies of strategically relevant resources (Berglund and Sandström, 2013; Katz and Kahn, 1966; Pfeffer and Salancik, 1978). To limit risks associated with dangerous centrifugal forces, with boundary variables and resources becoming external and competing with the company, there is a need to constantly seek arrangements that give relative cohesion to resources and boundary organizations often based on the ability to reach a strategic convergence of interests although starting from dissimilar and sometimes even apparently conflicting positions.

In any case, however, it is necessary to ensure and develop a sense of belonging in an organization to discourage dangerous opportunistic behaviours (Lado et al., 2008; Parkhe, 1991; Thompson, 1988; Williamson, 1996). Such physiological autonomy and flexibility in boundary relations emphasize the need for forms of cultural, strategic and operational coordination that are more advanced than traditional ones (Fronterre, 1991). Otherwise, bankruptcy risks become pronounced and the severity of effects on the company is proportionally correlated with the importance of tangible and intangible assets concerned.

Thus, how can organizations and subjects that are essentially autonomous combine specific interests and achieve "strategic consistency"? What are the main factors that ensure stability in the boundary relations? What factors control and govern coalitions?

Table 1 – Strategic relevant factors for the management of boundaries.

| Technological | Cultural | Relational |
|------------------------------------|-----------------------------------|------------------------|
| Information systems and technology | Entrepreneurship | Communication |
| Technological know-how | Creativity and innovation spur | Inter-company networks |
| Information and data flows | Leadership | Intra-company networks |
| Big data | Change management | Conflict management |
| Automation and AI | Values designing and organization | Fostering trust |
| Internet of Things | Motivator | Bearing actions |
| Weak signs capture | Sense of belonging | Linking actions |

Our analysis suggests that there are some strategic relevant factors for the management of boundaries. These factors are related to three highly related dimensions such as technological, cultural and relational. The boundaries management need to adequately consider these factors when confronting with multiple actors inside, outside and on firm boundaries. Specifically, it is easy to recognize the

need for delicate relational activity involving compromise and negotiation that organizes, structures and formalizes in ways considered appropriate while supporting relationships of trust, opportunism, power and dependence. Hence, the next section introduces concepts and theories of the negotiation literature and relates these to the strategic literature to reflect on and discuss the need for negotiation capabilities within the realm of capabilities required for boundary management.

5. NEGOTIATION FOR “BOUNDARY MANAGEMENT”

The deepening of decision-making processes commonly known as "negotiations" has been always been considered dear to scholars of management, who have focused on strategic cooperation forged between companies and their stakeholders at large (e.g., Fisher et al., 1981; Komorita, 1985; Kramer, 1991; Lax and Sebenius, 1986; Lewicki et al., 1992; Raiffa, 1982; Walton and McKersie, 1965; Zartman, 1977). Mostly influenced by the fields of political science, organizational psychology and management, over the years, these studies have contributed to the construction of so-called *negotiation theory*, which has assumed the development of techniques and models designed to solve political problems as a primary target of investigation.

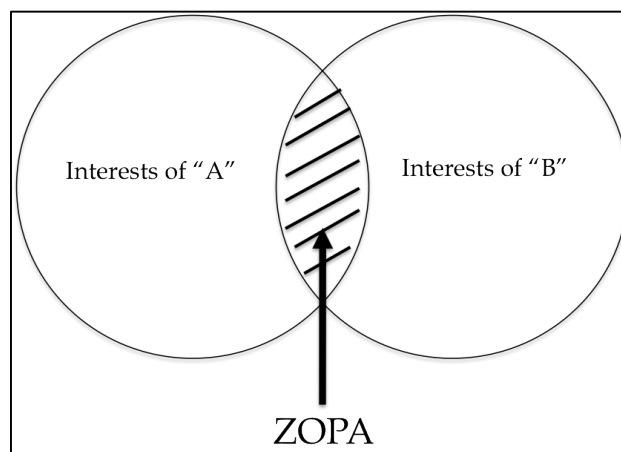
Management studies relating to negotiations have mainly focused on negotiation processes occurring between companies, customers, suppliers, and industrial relations. However, the vast majority of studies consider negotiation an individual activity rather than organizational activity, and even the few that recognize that organizations indeed negotiate largely fail to apply a systematic approach to the entire spectrum of negotiation activities while focusing on few functions and mostly on sales and purchasing (e.g., Borbély and Caputo, 2017a). Instead, the large collection of literature of political science has long acknowledged the role of institutional negotiation in describing how modern states negotiate (e.g., Zartman, 1977). Famous statements such as G.W. Bush's note on not negotiating with terrorists have formed a negotiation culture or imprint that has fostered the ways in which the U.S. has negotiated thus far. Similarly, the CEO of budget airline Ryanair has consistently exhibited a negotiation-based attitude towards the take or leave it approach that has permeated the entire company (e.g., Borbély and Caputo, 2017b). However, most management studies assume that organizations do not negotiate and that only people do. However, it is clear that any organization wishing to negotiate effectively and efficiently must make a coordinated effort to develop negotiation capacities at the organizational level. For example, Borbély and Caputo (2017a) theoretically developed a framework for the development of organizational capabilities of negotiation in unveiling how organizations can develop a negotiation capability. As such, a negotiation capability development should be pivotal to the management of firm boundaries and particularly in contexts of rapid technological change given

the need for continuous innovation through cooperation and competition and given the quest for new markets.

In a global environment where the digital revolution has substantially enhanced the rate of competition, the literature agrees that cooperation strategies applied within company departments and between companies can often have a number of benefits, including improved levels of communication, stronger relationships between suppliers and customers, and process sharing (e.g., co-design and co-production). This scenario is significant when businesses, due to a lack of know-how or funds, can hardly self-generate the innovation needed to effectively respond to market needs. Competitive positions are selected by companies acting as rational systems through choices made based on more strategic options. Scholars argue that several benefits can result from cooperation strategies such as a stronger communication, sharing processes such as those of co-design and co-production and closer interactions between suppliers and customers. This has important meaning in a context in which a lack of know-how or funds renders innovation needed to efficiently address market needs can hardly be automatically generated by businesses.

An essential characteristic of cooperation activities is the negotiation process. Negotiation skills are improved and the ability to negotiate effectively is enhanced through negotiation processes that are crucial to political, managerial, and business contexts.

Figure 1 – Representation of a generic ZOPA with the Euler-Venn diagram (Caputo, 2012)



Negotiation theory, in its prescriptive form, arises as a synthesis between economic-mathematic and socio-psychological approaches. Two main studies can be considered landmark works: Fisher, Ury and Patton's (1981) study influenced by psychological and behavioural doctrines and Raiffa's (1982) analysis based on game theory and the mathematical and statistical disciplines. The relationship between these works and Lax and Sebenius' (1986) work has contributed to the adoption of negotiation theory in management.

Over the years scholars have debated ways to locate, expand, or even create a ZOPA (Zone of Possible Agreement), which can be represented by an Euler-Venn diagram and which is defined as the intersection set of sets representing several stakeholder interest configurations. This is done by determining the strategic manipulation of elements of a negotiating structure as the main method, which is defined as components and relationships between components forming the basis of negotiation as a joint decision-making process.

Three basic elements compose the negotiating structure: i) the parties involved, ii) the subjects or issues under negotiation, and iii) preferences, and thus the interests and positions of the parties involved. Negotiations can be categorized according to these elements as follows. Regarding the *number of parties* involved: two negotiating sides can be distinguished (bilateral or dyadic) from negotiating with more parties or with multilateral ones (Raiffa, 1982). Parties can also be configured depending on whether they negotiate as an individual or as a group/organization or as an individual or collective. Regarding the *number of issues* involved, there are two different types: one-question negotiations and those covering more issues (Raiffa, 1982; Sebenius, 1983). Finally, on the *configuration of interests*, a distinction is made on the distributive from integrative negotiations. The first distributives are also known as win-lose (a fixed pie) and are configured for conflicting interests between parties. The latter distributives are defined as win-win (an expandable pie) due to the possibility of reaching an agreement that is satisfactory for all parties (Pruitt, 1981; Walton and McKersie, 1965).

In the management of firm boundaries, these three aspects play an important role in increasing the complexity of such negotiations; this is mainly attributed to the interdependence between the many parties involved. Certainly, scholars stress that multilateral negotiations often present very different dynamics of development from those of bilateral negotiations according to three dimensions: i) their larger size and ii) higher levels of complexity and iii) stronger diversity (Kramer, 1991).

Of the several parties involved in boundary negotiations, there are the heterogeneous ones with their own conformation of interests and issues. This complicates the process by broadening the scope of negotiations. For example, the blurred and interdependent systems of governance that interplay within the boundaries of a firm (Normann and Ramirez, 1993; Hakansson and Snehota, 2006) constitute at the same time a complexity factor as well as an opportunity factor for the negotiation taking place. The possibility for parties to form coalitions to influence the outcomes of negotiations represents a further source of complexity in multilateral negotiations recognized in the literature (e.g., Raiffa, 1992; Komorita and Kravitz, 1983; Murnighan and Brass, 1991; Polzer, Mannix and Neale, 1998). We propose that coalitions, for example, should be particularly critical for the management of boundaries where a firm must govern relationships in an efficient and effective fashion.

Integrative potential, which can be defined as an increase in the joint gain available to negotiators over and above the joint gain afforded by a fixed-sum solution, is included in many negotiation situations, and it is a primary topic of negotiation research as it concerns the achievement of integrative agreements. Integrative agreements can be made through the use of different specific negotiation strategies where several issues are considered or where several parties are involved (Sebenius, 1992). Thus, we argue that integrative negotiations are fundamental for successful boundary management, where several interests need to be jointly satisfied to exploit opportunities for competitive advantage.

Managers, as behavioural studies on negotiation and conflict resolution show, are often inefficient, and integrative agreements are not typically reached by them, although such agreements are frequently available, mutually beneficial, and therefore desirable (Moran and Ritov, 2007). The possibility of changing the game as a distinctive element of the negotiation process was first identified by Sebenius (1983, 1992), who argues how elements of negotiation structures, issues, parties, interests and positions change during negotiations. This issue can be considered an implicit and natural evolution of the process itself and can be tactically guided by parties involved. This manipulation, which is known as Negotiation Arithmetic, allows the elements of a structure to be changed by parties in a strategic manner and together with the adoption of conduct aimed at *creating* or *claiming value* allows, depending on the goal to be achieved by parties involved, the shifting of negotiations from distribution to integration and vice versa.

To create value by extending the range of potential agreements, the addition of issues that exploit differences in interests among parties involved can be considered a useful strategy. Likewise, this can complicate the negotiation process or destroy the possibility of solving other issues. The separation or setting aside of issues can simplify the negotiation process, but this can lead to complications in the achievement of agreements on other issues; in turn, there are trade-offs that must be evaluated. Such interests and positions can be strategically manipulated by parties involved through appropriate actions (e.g., by linking issues) during or outside of negotiations (Lax and Sebenius, 1986).

The manipulation of the number of parties through the same negotiation or by external facilitators can be considered another potential strategic approach to the shift towards an integrated approach.

To reach an agreement and to spur a significant influence on the conduct of negotiations, the absence or presence of an interested party may be required. Clearly, complications in of negotiation process result from changes made to the number of parties and issues involved and especially in the case of an increase in abundance (Sebenius, 1983). Therefore, adding parties to a negotiation can be a successful choice only when this may materially influence the negotiation or realize tangible interests. Such parties are typically allowed to participate to reinforce existing coalitions or to help form one

by leveraging links to new interests and issues (Murnighan and Brass, 1991; Polzer et al., 1998; Raiffa, Richardson, and Metcalfe, 2002). On the other hand, the release of parties from a negotiation can occur to reduce information costs, to reduce the complexity of the negotiation process, or to forge agreements shared by most of the original participants (Lax and Sebenius, 1986, 2002; Sebenius, 1983).

Scholars have examined specific strategic negotiations rather than considering negotiation as a whole from a strategic point of view. Jemison and Sitkin (1986), in their study on the acquisition process as a determinant of acquisition activities and outcomes, argue that the importance of negotiating practices lies in the acquisition process with reference to the success of operations (and particularly with regard to the acceptance of operations by personnel). Indeed, dissatisfaction and low levels of productivity can result from a lack of transitional support (Jemison and Sitkin, 1986). Furthermore, controversial research has been conducted on acquisitions in relation to the reasons why well-designed acquisition processes fail; in this regard, strategic fit cannot be considered as the only variable. Other drivers of success include the process of negotiating acquisition and the integration of a target into the parent company (e.g., Dierickx and Koza, 1991; Jemison and Sitkin, 1986). Likewise, studies show that joint venture negotiations differ from those of cross-cultural businesses because levels of firm motivation, project longevity, and resource commitment are different in the case of this form of negotiation (Luo, 1999; Luo and Shenkar, 2002), revealing a pattern in organizational behavior and especially with reference to contract negotiations (Lee et al., 1998; Luo, 1999; Luo and Shenkar, 2002).

Dierickx and Koza (1991) argue that individuals with prior negotiation experience should have an easier time managing information asymmetries and thereby achieving their strategic objectives such that information asymmetries can be considered endemic to merger and acquisition negotiations; similarly, they always exist during negotiations.

Recently, institutional studies have drawn a similar link between negotiation and strategies with the importance of negotiations in institutional settings being found to be useful in understanding dimensions of organization behaviours in negotiations (Helfen and Sydow, 2013; Helms et al., 2012). Scholars highlight that new practices sometimes arise “from the efforts of numerous and different organizations that work together to negotiate a settlement on a new institutional arrangement (trade associations, for example, working to develop novel industry standards)” (Helms et al., 2012, p. 1120). The imprint of organizational culture appears through negotiations even when it is believed that “organizations do not negotiate, individuals do” (Sydow et al., 2009). Negotiation strategies of unions or institutional organizations are typically quite consistent regardless of changes made by the negotiating team, showing some form of institutional movement behind individual practices. The

organization acts as an individual entity that brings issues and interests to the table, causing such strategies to represent behaviours of the organization itself (Helms et al., 2012; Weiss, 1990).

As noted above, negotiation plays an important role in the effectiveness of boundary management. Negotiation capabilities developed by boundary managers can favour information sharing (Aldrich and Herker, 1977), knowledge flows (Patriotta et al., 2013; Tushman and Scanlan, 1981), and conflict resolution (Schotter and Beamish, 2011). However, in the new competitive contexts created by a strong digitalization and expansions of the firm boundaries, how can organizations develop a negotiation capability in support of effective boundary management?

The recently developed OMoN (Organizational Model of Negotiation, Borbély and Caputo, 2017a) can support the answer to such question by drawing attention on where a negotiation capability can be created. The OMoN model consists of four levels (individuals, linkages, infrastructure and organizational capabilities) and prescribes stages for developing a negotiation infrastructure. The OMoN theoretically assumes that when it is applied to a company strategy, in our case a boundary strategy, it can ensure consistency in negotiations, hence improving the competitive advantages of a firm. Its application to the management of boundaries can be highly beneficial in supporting coordinated actions among actors who come into contact along boundaries.

The first level of the model is the *individual* level, which relates to the training and development of firm employee negotiation skills (Borbély and Caputo, 2017a). Stemming from the vast body of organizational psychology research investigating how people negotiate, this level concerns how boundary actors interact at the negotiation table. Variables to take into consideration at this level include characteristics of negotiations and their performance, processes and outcomes; satisfaction levels and the ethical views of negotiators. Successful boundary managers should, therefore, be conscious and knowledgeable about the behavioral aspect of negotiation. For example, they could put in place appropriate training and development actions for employees involved in boundary management that allows for integrative negotiations to take place.

The second level of the model considers *linkages*, which relate to the development of a system of negotiations within an organization (Borbély and Caputo, 2017a). In particular, this level prescribes how an organization should understand how different individual negotiations that take place impact one another. As such, previous negotiations are considered to serve as a context for subsequent negotiations, spurring the path-dependent evolution of how an organization negotiates. The boundary manager should be, therefore, aware of the interdependence among different negotiations taking place within the boundary and support effective knowledge exchange, through business processes, that allow to leverage on collaboration, trust and reciprocity. Variables to consider at this stage include the histories of previous negotiations, the contexts of negotiations, levels of situational awareness,

and how knowledge and experience are shared among employees and managers. It is fundamental for the management of boundaries to promote an environment of trust within boundaries to allow for information sharing. For example, interventions should take place to raise awareness of the benefits of relationships occurring along boundaries.

Figure 2 – The OMoN model applied to the management of boundaries (adapted from Borbély and Caputo, 2017a)



The third level of the model is the *infrastructure* level, which relates to the development of an organizational infrastructure in support of negotiations (Borbély and Caputo, 2017a). This level is concerned with the organization of a negotiation function that improves the efficiency and consistency of negotiations. In boundary management, this could be assimilated to a formal knowledge management system for negotiations, designed with a variable geometry that allows it to be dynamically opened to different actors in the boundary, even if external to the organization. Variables covered at this level include infrastructure characteristics, management practices, incentive systems, KPIs, and the transferring of knowledge.

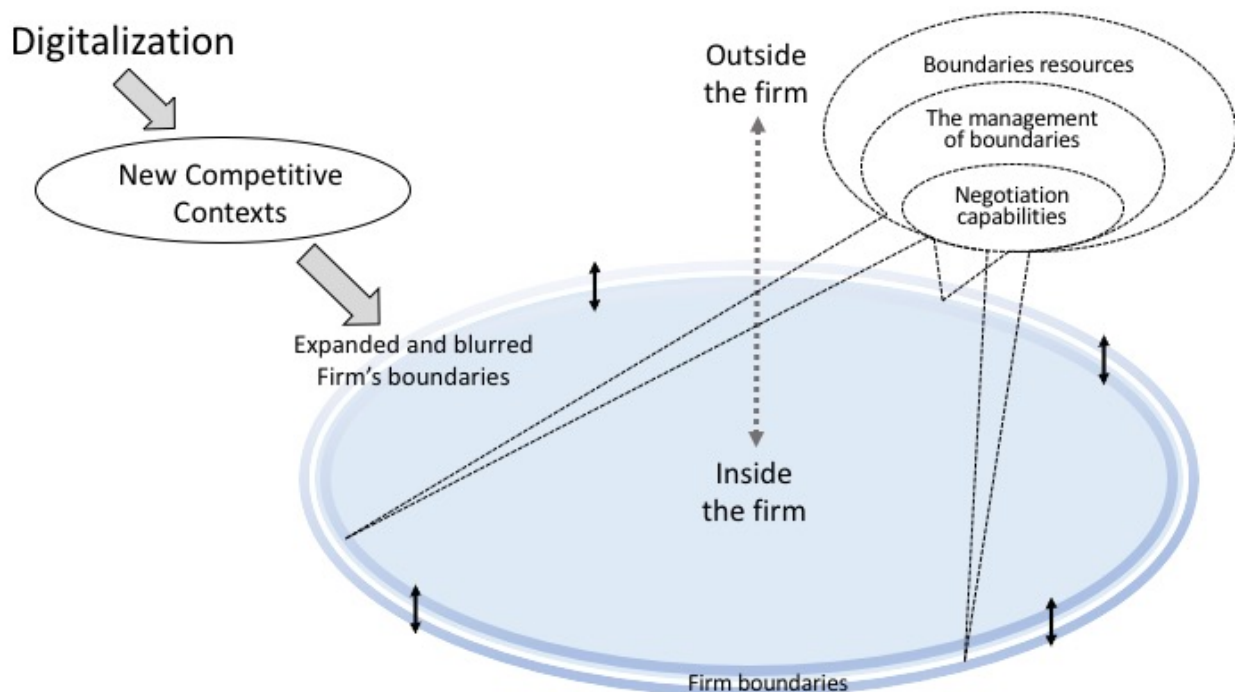
The fourth level of the model is the *capability* level, which relates to the development of negotiation as a strategic resource (Borbély and Caputo, 2017a). It is concerned with the strategic understanding of negotiation as a major source of competitive advantage in the boundary management, making the negotiation capability a pillar of the boundary management capability. Variables to be considered at this level may include organizational performance, upper management commitment, and idiosyncrasies found between organizations.

6. CONCLUSIONS

From a business processes perspective, the paper examined the role of boundaries in the new political and technological landscape. Our analysis suggested that in digital supply chains, boundary management and negotiation should be developed as key capabilities in aligning and integrating complex networks of partners interacting along firm boundaries.

We exhibit how the digital transformations of our time are creating new competitive contexts, such contexts are having a major impact on firms and business processes, making the boundary of the firms dynamic, expanding and more blurred than in the past. It is therefore necessary for managers to understand these dynamics and move the perspective from the boundary of management to the management of the boundaries, which should be done by developing a boundary management capability. This capability relies upon the opportunities provided by the digital transformation and includes as its pivotal part a negotiation organizational capability, which allows for a more effective and proactive management of the boundaries (Figure3).

Figure 3 – An explicative framework for boundary management



Our findings show that the choice to consider boundaries as the basis of a strategy promotes the design and management of business processes from a broader perspective. In using this perspective, firms should develop new capabilities (e.g., boundary management) to effectively connect firm value chains to those of “partners” (Schotter et al., 2017). Specifically, negotiations should deeply impact flexibility/performance outcomes (Caputo, Borbély, and Dabić, 2018).

In the context of digitization, we provide theoretical and managerial contributions to three main areas of the literature and a first attempt of integration of these three bodies of work together. First, from a theoretical point of view, we contribute to studies on business process management. We develop a matching framework for studying BPM by applying a perspective on firm boundaries that explicitly considers key features of negotiation (Fiorentino, 2016). In competitive contexts where digitalisation and intelligence are emerging, boundary management has become relevant as a means to affect the future development of business processes. Based on our findings, firms should increasingly determine whether business processes flexibly support partnerships by forging their own boundary capabilities or by 'plugging in' to partners' capabilities (Luvison and de Man, 2015; Niesten and Jolink, 2015). Second, we contribute to studies on supply chain management. Digitalization has spurred value creation managed in the firm "periphery" and in interfirm relationships (Kumar et al., 2016). We suggest that to overcome limits of traditional supply chain models, which generally involve rigid organizational structures, unapproachable data, and disjointed relationships with partners, firms should develop boundary capabilities such as those of boundary management. A critical question facing supply chain managers who seek to benefit from boundary capabilities concerns ways to face the complex relationships of firm boundaries. Negotiations can drive a transition from the "current view" of supply chains to a "future vision" of digital supply chains to enable automation, flexibility, and partner management (Papadopoulos et al., 2017).

Third, we contribute to strategic negotiation studies. We find support for extending the OMoN model to the management of boundaries (Borbély and Caputo, 2017a). This extension offers useful insights to scholars of negotiation, a very new field of management, in proposing opportunities to adapt and deepen current frameworks of specific research domains.

Practical implications of our study include the need for managers to ask questions, such as: How are we placed on the various levels of the OMoN? Which stages may prove useful in developing the targeted negotiation infrastructure? How can partners be persuaded to approve of boundary strategies used and of processes of digital transformation? More generally, managers may benefit from our propositions by reflecting on how boundaries are impacting their business and how they can manage both the current impacts and the future ones. A first action for managers interested in developing a boundary management capability would be to develop a role into the organization for a boundary manager, who oversees the business processes on the boundaries, assesses skill needs and implements appropriate trainings, develops an infrastructure that exploit the benefits of digitalization in fostering collaboration and trust among the boundary actors.

Future studies may empirically develop our work from the existing literature. Our findings suggest that digitization should transform boundary management systems, supply chains and negotiation patterns. Future studies may pose ‘where’ and ‘how’ questions.

Scholars of BPM may extend our framework to explore the effects of subcomponents of boundary capabilities and negotiations to better understand subtle effects on business process performance and partner management. Empirical studies should test our conceptualization and apply our framework to specific cases. In addition, future studies should explore how digitalization is being used in boundary business processes, how digitalization has transformed boundary resources and capabilities, and how these shifts may continue to manifest in the future. Similarly, another promising avenue for future research is the further investigation of the knowledge gaps related to boundary management (in terms of challenges, value, data, etc.) and negotiation (in terms of organizational, skills, capabilities, and processes). Moreover, our study should promote the investigation of new challenges of boundary management in relation to digital supply chains. Studies should discuss ways to identify opportunities and risks related to the management of big data along firm boundaries. Specifically, reflections drawn from this article may trigger scholars to investigate the role of data generated from increasingly broad boundaries that characterize contemporary firms. As such, questions related to data protection and cybersecurity and especially in the light of recent scandals that have affected Facebook and Cambridge Analytica may serve as another line of investigation. Similarly, ethical concerns related to the management of boundaries may offer interesting avenues for future research. The management of information and data sharing across and within boundaries must be ethical and carefully managed between partners. Companies developing boundary management capabilities must consider ethical issues related to data protection and storage, as data are increasingly becoming of strategic importance as a shared environment with decisions to be made on the access and ownership of such information.

Finally, the findings of this study may be extended to inform negotiation research on which factors affect partner selection and negotiation. In particular, studies may focus on the implications of boundary management for human skills, as well as training and development. Future studies with this focus could examine changes affecting skills needed to engage in negotiations along boundaries and what this may mean for negotiators. Such studies may examine whether negotiators must become data scientists or analytics experts, whether the rate of skills obsolescence is expected to increase or ways to use digital data to drive boundary management in negotiations as a profitable line of investigation.

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