

Adaptation, Learning, and Power:

An Empirical Examination in Buyer-Supplier Dyads in the European Food Industry

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ABSTRACT

In this paper, we develop a comprehensive framework of Interorganizational Adaptation (IOAD), drawing from institutional economy, organizational learning, and the industrial marketing and purchasing body of literature. We reason that learning processes underlie IOAD, which in turn is constituted by a technical and a behavioral dimension. Power is involved in the framework given its pervasive impact on the unilateral versus bilateral nature of IOAD. Subsequently, we explore and refine the framework through multiple embedded case studies in the European food industry. The IOAD framework contributes by its overarching nature, integrating previous technical oriented studies on adaptation and the more dispersed studies on the behavioral dimension, and by clarifying the role of learning. The case data confirm the projected relationship between power and IOAD, possibly weakened by the presence of exploratory learning.

(Key words: partnerships, interorganizational adaptation, learning, power, trust)

INTRODUCTION

In a context characterized by global competition, volatile demand, and accelerated speed of technological changes, competition increasingly takes place between dyads, entire supply chains or networks, rather than between individual firms in isolation (Dodgson, 1993). Consequently, supply chain partnering (i.e. “close long-term links between organizations in a supply chain that remain distinct”, Boddy, MacBeth & Wagner, 2000: 1004) has become an important means for companies to deal with these changing contingencies. Nonetheless, intents of partnering are more likely to fail than to succeed (Boddy et al., 2000; Spekman, Forbes III, Isabella & MacAvoy, 1998), calling for sustained research efforts adhering to this dyadic level of analysis (Cox, 2004; Lane and Lubatkin, 1998).

The relationship level of analysis is furthermore interesting as the emergent nature of change (i.e. complex system behavior which is more than the sum of its individual parts because they relate in a non-linear fashion, Holland, 1998: p. 122) on the corporate level (Mintzberg, 1994) is likely to be magnified at the supply chain relationship level (Boddy et al., 2000). Performance in this context then refers to the ability to decipher the environment and to respond accordingly (Edmonson and Moingeon, 1996).

Interorganizational adaptation (IOAD; coined as “the process by which an organization becomes fitted to another organization”) is such a response that warrants study because (1) it may imply considerable investments which can often not be transferred to other relationships; (2) it may be of critical importance for the supplier’s possibilities of conducting business with the specific customer or for the customer’s possibility of securing needed products; and, (3) it may have consequences for the long-term competitiveness of the partners (Cannon and Perreault, 1999; Hallén, Johanson, and Seyed-Mohamed, 1991; Williamson, 1986).

Adaptation is a central concept in institutional economy, organizational learning, and industrial purchasing and marketing literature. The treatment of the concept, however, is disperse and sometimes even inconsistent. Therefore, the aim of the paper is to develop a comprehensive framework of IOAD. We reason that learning processes underlie IOAD, which in turn is constituted by a technical and a behavioral dimension. Literature review accompanied by an initial empirical exploration of the phenomenon shows that (a) the behavioral dimension of IOAD is underdeveloped; and (b) a full understanding of IOAD is only to be obtained when acknowledging the pervasive impact of power (Hart and Saunders, 1997; Levinthal and March, 1993). Therefore, more specific research questions aim to develop a classification of behavioral IOAD, assess the presence different types of interorganizational learning processes, and to analyze the impact of power on IOAD.

Answers to these questions are sought by exploring six case studies of supplier-producer dyads in the European food sector, a large and dynamic industry subject to shifts in consumer preferences and regulations. Consequently, IOAD is of paramount interest. Nonetheless, the food industry has seldom been the context for empirical examination of partnerships, unlike, say, the electronics industry (e.g. Boddy et al., 2000).

The paper is built up as follows. First, we will explore the three perspectives on (inter)organizational adaptation. The impact of power on the phenomenon is pointed out. Second, we will present the research model and the employed methodology for the empirical study. Then, we will shortly present the six cases and elaborate the answers on the three research questions. Finally, we will draw conclusions and point out directions for further research.

LITERATURE REVIEW

In the following, (inter)organizational adaptation is elaborated from the perspectives of institutional economy, organizational learning, and industrial purchasing and marketing. The subsequently proposed comprehensive view on IOAD is grounded upon these perspectives, and is elaborated in a technical and behavioral dimension. Finally, we will elaborate the impact of power on IOAD.

Adaptation from the Perspective of Institutional Economy

Institutional economy studies the development of markets as a result of competitive forces, such as adaptation. The scope of this body of literature is the macro economy, and adaptation takes place on the firm level respective the economy in which it operates. Lazonick (1991), drawing from the work of Schumpeter, distinguishes in this regard the adaptive from the innovative enterprise. The innovative organization shapes the process of economic (and social) development whereas the adaptive organization takes the environment as given, and simply tries to minimize its cost or maximize its profits on the basis of existing productive resources. This is reflected in the investment decision of both types of organization; (a) innovative organizations enhance their productive resources whereas adaptive organizations merely may increase their productive resources according to well-known technical specifications; (b) innovative organizations face unknown yield of capabilities whereas the adaptive organizations deals with known yields of capabilities; and, (c) innovative organizations seek to confront economic uncertainty whereas adaptive organizations seek to avoid it (Lazonick, 1991).

Williamson claims that “adaptability is the central problem of economic organization” (1991: 277). Consequently, his much cited Transaction Cost Analysis (TCA) constitutes a theory of the adaptive organization, where managerial activity focuses on adaptive-sequential decision making, in the face of disturbances (Lazonick, 1991: p.197). TCA’s advice for organizations facing high adaptation requirements is to choose for a hierarchic governance form (rather than markets or partnerships), because of the possibility of internal fiat (Williamson, 1986). TCA becomes ahistorical and static, however, due to its focus on the single transaction as unit of analysis. Other

bodies of literature have reproached TCA this neglect of ongoing structures of social relationships by which economic actions are carried out (e.g. interlocking directorates) and have consequently filled this void (Granovetter 1985; Håkansson 1987; Uzzi, 1997).

Although entire organizations may be classified as being adaptive or innovative, it is to be expected that within one organization both adaptive as well as innovative processes may be found. In institutional economy it is Chandler who gives some room for this nuance by suggesting that innovative decision making takes place at the strategic level and adaptive decision making at the tactical and operational level (Lazonick, 1991: p. 214). Organizational learning studies, on the other hand, further elaborate this nuance as will be elaborated in the following.

Adaptation from the Perspective of Organizational Learning Studies

Organizational learning studies acknowledge both adaptive and innovative processes within the organization. But, whereas adaptation and innovation are clearly distinct phenomena in institutional economy, the boundary between both tends to blur in organizational learning studies. This is illustrated by the fact that on the one hand adaptation is often equaled to learning in introductory statements of organization studies, and, on the other hand, learning is elaborated into exploration (i.e. variety seeking processes, related to innovation) versus exploitation (i.e. reliability seeking processes, related to adaptation) (March, 1991). Some examples of this inconsistency are: March who claims that “most theories of adaptation assume that effective learning requires a balance between exploration and exploitation” (1996: p. 278) followed by “adaptation requires a balance between exploration and exploitation” (1996: p. 286); and, Holmqvist who states that “exploitation and exploration are two adaptive processes” (2001: p.1) and that “The focus (of organizational learning) is on the adaptation of organizational rules to environmental changes as experienced by the organization (2003: p. 97).

This distinction between exploration versus exploitation (March, 1991) is elaborated by several other scholars from the field of organizational learning and may operate on the individual level (Argyris and Schön, 1978), organizational level (Hedberg, 1981; Holmqvist, 2001) and interorganizational level of analysis (Holmqvist,

2003, 2004). The associated cognitive approach to learning becomes clear when the authors claim that a balance between the two types of learning has to be achieved as “they compete for scarce resources” (March, 1991: 71). The cognitive approach to learning has been dominant in literature (Contu and Willmott, 2003) when compared to other approaches such as behaviorism, pragmatism, and situated learning (Sauquet, 2004).

Whereas imprecise wordings in several studies illustrate the problem of blurring boundaries, the underlying cause seems to be the fact that the degree of novelty of an organizational change depends on the scope of the environment which is taken into account; i.e. a change in a certain organizational attribute may seem innovative to someone with a scope no further than that specific organization, but rather adaptive by someone with an extended scope and thus more insight in the movements of other organizations. Thus, the broader the environment taken into account, the more difficult it is to encounter a real innovative change.

Therefore, rather than sticking to dichotomous distinctions of learning processes and the associated adaptations versus innovations, a “degree-of-novelty”-continuum may offer a solution for the problem of blurring boundaries (see figure 1). A definition of organizational adaptation which is in line with the proposed continuum is: “organizations’ attempts to transform themselves in response to environmental change” (Kraatz, 1998: p. 621) leading to “a change in a significant attribute of the organization” (Levinthal, 1997: p. 934). Learning processes can then be visualized as underlying adaptation (Huber et al., 1979: p. 568); i.e. as a means to the end of renewal (Crossan et al., 1999: p. 522). Learning, however, may progress beyond mere adaptation and thus also underlie the pro-actively shaping of the environment (innovation).

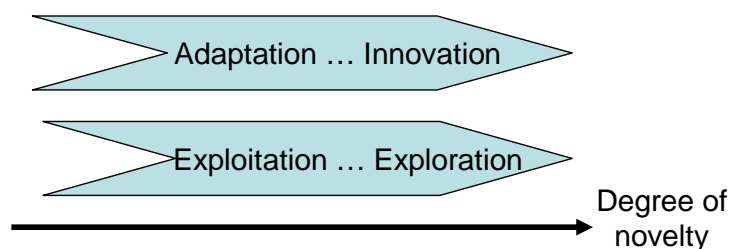


Figure 1 Degree of novelty continuum: learning underlies adaptation-innovation

Adaptation from the Perspective of the Industrial Purchasing and Marketing Group

Adaptation is also of central concern in the Industrial Purchasing and Marketing (IMP) group who acknowledges the dynamic interplay of adaptive processes with the simultaneously ongoing exchange processes between two business partners (Håkansson, 1987; Medlin, 2004). This body of literature contributes by drawing the “technical” (structural and technological) dimension of adaptation, such as the alignment of processes, products or procedures specific to the needs or capabilities of the exchange partner (Brennan et al., 2003; Cannon and Perreault 1999, Hallén et al. 1991). For instance, a supplier may initially adapt his product to meet the demands of a specific customer and start exchange with this customer. The customer in turn, when satisfied with the exchange, may adapt his production process in order to better handle the supplied product. The supplier then, gaining confidence in the exchange relationship, may adapt his logistical systems to improve deliveries to this customer. Technical adaptations between exchange partners are thus closely related to idiosyncratic investments and asset specificity of transaction cost analysis (Williamson, 1986).

Interorganizational Adaptation (IOAD): a proposed encompassing perspective

Based on the previous three perspectives, table 1 provides an overview of the similarities and differences in assumptions of studies on adaptation versus those on learning. Being aware of the great disparity in the different approaches on learning and their associated underlying assumptions (Dodgson, 1993), we have limited the learning studies to those with a cognitive approach (such as Hedberg, 1981; Holmqvist, 2003, 2004; Levitt and March, 1988; Levinthal and March, 1993; March, 1991).

Organizational adaptation	Organizational learning
<i>Similarities</i>	
Is experiential	Id.
Encompasses both processes and outcomes	Id.
Generally has positive outcomes (except e.g. when the relationship becomes too embedded, Uzzi, 1997)	Generally has positive outcomes (except e.g. when competency traps occur, Levitt and March, 1988)
The process is driven by individuals, but the result is embedded in the organization. Social and political factors influence in this	Id.

institutionalizing process.	
Differences	
Has a technical (structural or technological) and behavioral (attitudes, beliefs and behaviors) dimension	Is generally approached from the behavioral perspective
The technical dimension may be episodic in nature, whereas the behavioral dimension changes in a continuous mode	Is approached as an ever-changing process, occurring through ongoing social action
Driven by changes in the environment; has thus an inherently dyadic nature	Driven by changes in the environment as well as internal factors (such as self-realization, Dodgson, 1993)
Located on the low side of the “degree-of novelty-continuum”: refers to defensive (reactive) responses	Covers the whole spectrum on the degree-of-novelty-continuum: refers to both defensive and offensive (proactive) responses

Table 1 Similarities and differences between organizational adaptation and learning

Whereas organizational adaptation occurs in response to some macro-environment, interorganizational adaptation (IOAD) takes place in reference to a specific partnering organization. IOAD thus refers to the process by which an organization becomes fitted to another organization. In line with the previous three reviewed perspectives and in order to build an encompassing construct, we propose that IOAD has both a technical and a behavioral dimension. These dimensions will be elaborated in the following as well as the relationship with learning.

Technical IOAD These studies generally coincide with the scope of IOAD and have resulted in classifications of technical IOAD (e.g. product, process, procedure, structure), as elaborated under the heading of the IMP group.

Behavioral IOAD These studies are mostly indirectly related and thus require further interpretation to draw the link with the phenomenon. A behavioral view on IOAD emphasizes the evolving of the relationship through practice and repeated interaction of their members. Consequently, different professional languages are bridged favoring a shared understanding of issues and objectives (Håkansson 1987). It thus reorients organizational members away from a competitive towards a cooperative approach.

Inherent to behavioral IOAD is the process of trust building (Granovetter, 1985; Hart and Saunders, 1997). Trust in a partnering context refers to the belief that one’s partner will act in a predictable way, will keep his/her word, and will behave in a way that will not negatively affect the other (Spekman Forbes III, Isabella, and MacAvoy,

2002). Trust has been further detailed in several ways. Lane and Bachmann (1998) propose a classification in (a) value- or norm based trust, embedded in a social community with common values/moral; (b) calculative trust, the calculation of risk associated with the presumed opportunistic behavior of the business partner; and, (c) cognition or expectation-based trust, stemming from predictable expectations about social order in general and specific interactions with others. The different views on trust complement each other, and the nature and intensity of trust will vary with the stage of the relationship reached (Lane and Bachmann 1998).

Informal relationalism or mutual adjustment (i.e. informal communication and socialization processes between both partners as opposed to formal planning, Mintzberg, 1994) is also inherent to behavioral IOAD. It is usually developed by line managers on the middle management level directly involved in operations. Informal relationalism may lead to the often more effective informal cooperation (Håkansson and Johanson, 1988) and is even called the glue that holds the partnership together (Spekman et al., 1998).

Thus, it seems that trust and informal relationalism constitute classes of behavioral IOAD. In contrast to the technical dimension of IOAD, however, this dimension does not count with a classification system in extant literature. Therefore, a first research question is:

(1) How can the behavioral dimension of IOAD be classified? (i.e. develop a classification system of the behavioral dimension of IOAD)

Interorganizational learning In analogy to our previous conclusion that organizational learning underlies organizational adaptation, interorganizational learning underlies IOAD. The inferences drawn from experience, which are recorded in documents, accounts, files, standard operating procedures, and organizational structure (Levitt and March: 1988, p. 327) belong in that regard to technical IOAD. On the other hand, inferences drawn from experience which are recorded as standards of good professional practice, organizational culture, and shared perceptions (Levitt and March: 1988, p. 327) belong to behavioral IOAD.

Whereas interorganizational learning from an individual organization's perspective (i.e. one sided learning, by which existing knowledge is transferred between partners)

has already some research history, research with a dyadic focus (i.e. joint learning, by which new knowledge is created) is still very scarce (Larsson, Bengtsson, Henriksson & Sparks, 1998). Regarding the latter perspective, some studies have focused on the conditions for joint learning to take place, e.g. the alignment of learning strategies (Larsson et al., 1998), or the alignment of knowledge-bases, organizational structures and compensation policies, and dominant logics (Lane and Lubatkin, 1998). Others have focused on the required capabilities, e.g. relative absorptive capacity (Lane and Lubatkin, 1998). Nonetheless, only few studies have explored the associated learning processes at the dyadic level (Holmqvist, 2001, 2003, 2004), which are triggered when partners perceive a discrepancy between observed and aspired outcomes (Levitt and March, 1988), or when they foresee a contextual change and prepare the dyad to affront it (Uzzi 1997). It is expected that both one-sided learning and joint learning processes underlie IOAD. Studies which empirically address both types of learning in the same partnership are unknown though. Therefore, a second research question is:

(2) How do one-sided and joint learning processes underlie IOAD?

The impact of power on IOAD

The concept of power is included in the research model, given its pervasive impact on IOAD apparent from literature review and an initial empirical exploration. Power has been defined on a supply chain relationship level as “the ability of channel member A to control the decision variables of channel member B” (Gaski, 1984: p. 25). Firms are powerful when they control resources that more dependent firms rely upon. Thereby, the greater the relative dependence, the greater the power of a resource-rich firm to influence resource-dependent firms (Hart and Saunders, 1997). Gaski (1984), on the other hand claims that power and dependence are conceptually inseparable and thus redundant. In line with Gaski (1984), this paper considers dependence alone to be a reasonable adequate predictor of power.

Buyer dependence on a specific supplier increases with (1) few alternative sources of supply; (2) the financial and strategic importance of supply; and, (3) the complexity of supply whereas supplier dependence on a specific buyer increases with (1) a high percent of sales revenue from a particular buyer, and (2) the ability of the buyer to select another supplier (Cannon and Perreault, 1999; Hallén et al., 1991; Hart and Saunders,

1997). Consequently, buyer-dominant, supplier-dominant and reciprocal partnerships can be distinguished (Cox, 2004).

There are different ways that power can effect change in a partnership. Potential power is a source of influence though it is not exercised. It is likely to drive change when the dependent partner perceives little additional cost related to the change (Hart and Saunders, 1997). Enacted power, on the other hand, refers to the actual use of potential power and may be further distinguished in persuasion, focusing on benefits and inducements, and coercion, focusing on threats and punishments (Frazier and Rody 1991; Hart and Saunders, 1997). Enacted power increases the predisposition of the less powerful partner towards IOAD (Chwelos et al., 2001), but, when used in a coercive fashion, may leave less powerful partners more vulnerable constraining the relationship in the long run (Hart and Saunders, 1997).

The power construct is relevant in this study as it explains the unilateral or bilateral nature of IOAD. Power allows an organization to impose its policies, products and strategies on its partner rather than adapt to it (Levinthal and March, 1993) thus leading to unilateral IOAD (Brennan et al., 2003; Hallén et al., 1991). The relationship between power (dependence) and IOAD is confirmed by institutional theory: (1) The greater the dependence of an organization on another organization, the more similar it will become to that organization in structure, climate, and behavioral focus; (2) The greater the centralization of organization's A resources supply, the greater the extend to which organization A will change isomorphically to resemble the organizations on which it depends for resources (DiMaggio and Powell 1983).

Overall, the relation between power and IOAD has been theoretically explored from different angles. Nonetheless, given the scarceness of empirical results it seems interesting to explore the following research question:

(3) How does power impact IOAD?

RESEARCH MODEL AND METHOD

Figure 1 illustrates the theoretically developed comprehensive framework of IOAD and the three research questions for further empirical inquiry.

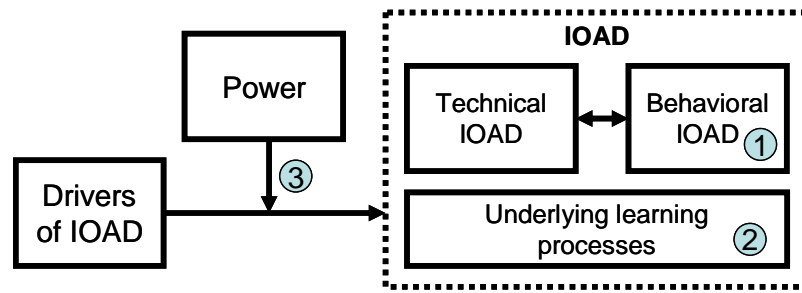


Figure 2 Comprehensive framework of IOAD - Research model

The empirical part of this study is grounded upon a multi-case embedded approach (Eisenhardt, 1989; Yin, 2003). More specifically, six cases of buyer-supplier partnerships have been explored. Semi-structured interviews were held from 2005 to early 2006, with boundary spanners from different hierarchical levels from both the purchasing and supplying companies. Interviews lasted approximately 1.5-2 hours and were recorded for subsequent transcription and analysis.

The buying companies of all six cases stem from the food industry and have European head offices. The supplying companies are from the packaging industry and have both European and American head offices. Appendix 1 gives the key data on the cases. Note that two producers each are involved in two cases, which reduces variance caused by the producer's characteristics and facilitates cross-case analysis. Besides the industry in which they operate, a criterion to consecutively involve new cases has been to confirm than well contradict emerging results. Furthermore, the willingness of a food producer to not only participate himself but to also convince a strategic supplier to participate has been fundamental for the final selection.

THE CASES

The following gives a brief description of each case focusing on: the exchanged product; the main drivers of IOAD; and, the main technical IOAD. Logically, several industry-wide drivers of IOAD apply for all cases and will therefore not be repeated: (a) an increasingly strict legislation regarding traceability of food products; (b) the emergence of generic low cost brands; (c) the ever increasing pressure from retail to cut

prices; (d) increasing costs of raw materials; and, (e) mass individualization leading to a high pace of new product introductions. After the brief descriptions of each specific case, we will use case data to elaborate an aggregated answer to the three research questions.

Short Case Descriptions

FoodCo-CartonCo The relationship between FoodCo and CartonCo dates from some 40 years ago. The supplied compact carton is a secondary package and is increasingly becoming a commodity product. FoodCo is the most established producer of high quality food products ranging from baby food to frozen meals, in the Iberian market.

Besides the previously mentioned industry wide drivers, a more specific driver of IOAD in this relationship has been the strategic decision of the corporate direction of FoodCo in 2001 to coordinate and optimize supply processes by implementing the supply chain module of a public electronic market system called CPGmarket. The projected benefits of this system were the digitalization of data (such as error reduction, lower administrative workload) as well as greater information-sharing (leading to identification of surplus stocks). Another driver of IOAD has been the introduction of a tender system by FoodCo for commodity products.

As a consequence of the introduction of the tender system, CartonCo suddenly saw its sales volume to FoodCo drop back with 30%. At the same time, ironically, CartonCo functioned successfully as pilot supplier for the implementation of the partnership-flavored CPGmarket. The implementation is accompanied by a contractually laid down commitment by FoodCo to purchase the first two months of forecast (frozen window) which reduces the supplier's uncertainty regarding his sales volume and may result in more timely deliveries. The implementation of a call-off change message by FoodCo, which is beneficial for suppliers, is very much delayed on the other hand. Other examples of technical IOAD are: the implementation of consignment stock, and the increasing importance of the key account manager in CartonCo (given the importance of FoodCo as a client).

FoodCo-GlassCo This relationship even lasts longer than the previously described one; GlassCo supplies already during 50 years glass pots for products like desserts and sauces of FoodCo. The supplied primary package contributes to the final consumer product providing conservation functionality as well as a high quality image.

IOAD in this relationship has been driven by the corporate decision of FoodCo to implement the supply chain module of CPGmarket, just as in the previous case. Nonetheless, given the specialty of the glass material, the tender system does not operate between these two partners, as different from the previous case.

Technical IOAD in this case consists of the actual implementation of CPGmarket, comparable to the previous case, though users do not refer in such a positive tone to the system as CartonCo does. Consignment stock is also implemented, but is reciprocated in this case by FoodCo offering physical space to GlassCo to guard the stock.

DairyCo-PakCo The relationship between DairyCo and PakCo lasts for some 25 years by now and is characterized by a constant exchange of tailor made paperboard packages for fresh daily beverages. The classical paperboard packages, which were developed already a hundred years ago, are of vital importance for DairyCo as they aid in building the product image related to quality and freshness. Besides this primary package, PakCo also delivers the filling machines, the maintenance of the machines, and expertise in product development.

Besides the previously mentioned generic drivers, key drivers of IOAD have been: a growing rate of new product introductions to maintain market share; and, an increasing scope of business as the number of fresh dairy producers has decreased from 5-6 to 2. More specifically, a driver has been the poor quality of the paperboard package supply, as expressed by a sudden low vendor rating in 2005.

Consequently, an important aspect of technical IOAD has been the establishment of a joint task force in order to meet the quality demands of DairyCo. Besides the joint task force, PakCo also has in house task forces to improve offerings to DairyCo. Furthermore, Vendor Managed Inventory is introduced to optimize supplier production processes and reduce costs. Also, a key boundary spanner of PakCo has been substituted to improve the relationship between both partners. No mayor changes in the systems

sphere have taken place recently; the implementation of CPGmarket (see cases 1-2) is projected for some time in future.

CheeseCo-LabelCo LabelCo prints primary packaging materials such as ultra-thin labels and paper bounds to be sealed directly on the products of CheeseCo. These functional as well as decorative materials are exchanged for some 25 years by now. LabelCo, in turn, used to contract a lithographer for the production of printing plates.

A recent important driver of IOAD, however, has been the centralization of lithography services into one company (LithoCo) contracted by CheeseCo, where previously each supplier of printed materials counted with his own lithographer. These changes aim to standardize the final printing results, given the different characteristics of the diverse materials; i.e. a theoretical design on paper may be very different when compared to the final print on a label, a foil, or a carton pack. This development is accompanied by the change of package design of the entire catalogue of CheeseCo (60 sku's, each with 3-4 package materials), in which LithoCo thus plays a pivotal role. This case study considers LithoCo as an extension of CheeseCo as they look after their interests (“we are their conscience and their convenience”, account manager of LithoCo). Besides standardizing printing results, the centralization aims to cut costs and deal in that sense with price pressure from retail. LabelCo and LithoCo furthermore experience price competition of printing companies in China, Eastern Europe, and India.

In response to these drivers, technical IOAD is constituted by a change in coordination processes between CheeseCo and LabelCo, mediated by LithoCo, in order to increase efficiency and avoid printing errors. The early involvement of the three parties in the different stages of reaching an acceptable printed design increases drastically the interchanged knowledge and expertise. Consequently, CheeseCo could timely adapt its design due to the limitations of printing techniques. Finally, all parties are satisfied with the new coordination mechanisms and printing results.

CheeseCo-FoilCo FoilCo supplies since 3 years foils to an outsourced production line of CheeseCo. This indirect relationship thus only covers the quality of the final printing results and not the negotiation on prices and volumes.

The drivers of IOAD are similar as those described in the CheeseCo-LabelCo case. During the change project of the package design of CheeseCo, FoilCo has had intensive contact with both CheeseCo and LithoCo. The third party contractor on the other hand did not have any involvement in this project given the scope of his activities.

Nonetheless, IOAD, and more specifically the coordination processes mediated by LithoCo still have to take shape. The involvement of FoilCo in the change project, when compared with CheeseCo, has been much less. Consequently, the printing process is still characterized by redundant activities, late detection of printing limitations, and printing errors. FoilCo complains about its too late involvement and the lack of briefing before the project took start.

CoffeeCo-FlexbagCo The relationship between CoffeeCo and FlexbagCo is interesting, given their disperse management philosophies; the former characterized by sustainability and social responsible entrepreneurship thus operating in a niche market, and the latter by profitability and share holder value. Nonetheless, both companies collaborate successfully since 15-20 years as FlexbagCo is capable of supplying a functional package with a “biological” touch suggesting a “beautiful” content.

A driver of IOAD is the saturation of the coffee-roasting houses market, which causes the big-volume supplier to appreciate every client, even a small one as CoffeeCo. Also, new environmental legislation obliges suppliers to produce in a more environmental-friendly fashion, which suits better the management philosophy of CoffeeCo. A specific driver was the severe quality problem of supply when production was moved from the Netherlands to a facility in Germany. Several orders had to be returned but fortunately the problems were quickly detected and resolved.

Technical IOAD has occurred due to this movement of the production location and the associated larger lead-times. CoffeeCo as a result has adapted its planning procedures and currently calls-off its orders more time ahead. In general, CoffeeCo has adapted its planning logic to incorporate the lack of flexibility of the supply process. FlexbagCo, on the other hand, has adapted its organization to enable collaboration with CoffeeCo. Eight years ago, when the current procurement manager started in the function she immediately requested a substitution of FlexbagCo’s account manager

given his bad performance, in her eyes. Consequently, the account manager was changed and the newly appointed person collaborates successfully since that time.

Exploration of the Behavioral Dimension of IOAD

Whereas technical IOAD occurs at specific moments in time, behavioral IOAD has a more continuous nature. In that regard, both partners refer to the processes which have led the relationship to become embedded in the past and an anticipated future:

"if you work daily with a company, every day covering with more ease more themes, which are of shared interest, well then, the relationship should improve"
(coordinator e-Supply Chain projects, FoodCo)

Empirical exploration of behavioral IOAD confirms the relevance of the theoretically derived concepts of trust and informal relationalism. A third concept which emerges refers to shared values. The following reports these results.

Shared values

Organizational values (i.e. the beliefs held by an individual or group regarding means and ends organizations 'ought to' or 'should' identify in the running of the enterprise, in choosing what business actions or objectives are preferable to alternatives, or in establishing organizational objectives, Enz, 1988) are important as their union with beliefs represents a certain attitude and a predisposition for behaviour (Christopher, Wasti, and Arzu, 2002). The sharing of values reduces uncertainty in relation to "the correct way to perceive, think and feel" (Schein, 1985) and thus permits organization members to perceive and process external stimuli in a similar way, and consequently behave in a similar way (Meglino and Ravlin, 1998)

In all six cases it is observed that over time both partners become aware of important aspects of doing business, as considered by the other. Consequently, they develop a set of shared values, which guide daily exchange. The specific set of shared values differs per case, though some values are repetitive. Shared values refer for example to "joint problem solving", expressed as follows:

“We have to overcome the printing problems between the three involved parties...we are mutually dependent...we are all very aware of that” (marketing manager CheeseCo).

And:

“When the delivery quantities change (compared with the agreement), we try to resolve the problem... it is important to understand each others problems and do everything which is in our reach to solve them...instead of saying “I am sorry, but according to our contract this is not possible”... Of course, we are in business, but let’s play at least as gentlemen” (sales coordinator of CartonCo).

The acknowledgement of behavioral IOAD, and more specifically shared values, is relevant as it explains the success or lack of success of technical IOAD. In that regard, the latter (CartonCo) case illustrates that people do not stick to the contractually laid down frozen window given the predominance of the problem solving value.

Trust

The development of a shared set of values over time, as pointed out in the previous section, precedes the emergence of value-and norm based trust (Lane and Bachmann, 1998). Both partners trust in each other given the shared values which lead to predictable behavior and behavior which is not detrimental to the relationship (given that the shared values refer to the quality of the relationship). Besides value-and norm based trust, cognition- or expectation based trust is also strongly present in both cases. The latter type of trust is illustrated by the purchase coordinator of FoodCo, when he refers to CartonCo:

“they adjust to the agreement; if they say white, it is white, if they say black, it is black...it is not a continuous negotiation; we establish conditions and then we work according to those conditions”.

The sales manager of GlassCo confirms the existence of cognition-based trust as he praises the predictable, rational, and highly professional behavior exhibited by FoodCo when it receives customer complaints regarding product quality:

“neither of us wants to blame the other; we want to search for the real cause of something which has happened in our or in their production facility, and look for

possibilities for improvement.. its people who understand you, your problems, and collaborate to resolve them " .

The third type of trust, of a calculative nature, is only slightly present in the cases. It is illustrated by the critical tone adopted by the sales manager of CartonCo, after the loss of the tender:

"(I will have confidence in this partnership) as long as we will be able to reduce stocks (currently we are above the mean) and as long as they will keep their word and buy us the amounts agreed upon in a tender".

The acknowledgement of behavioral IOAD, and more specifically trust, is relevant as it explains the success or lack of success of technical IOAD. In that regard, the CartonCo case illustrates that the predominance of value based trust and cognition based trust over the calculative type of trust leads to a continuing partnering flavor, despite the drastic cut in exchange volume with FoodCo.

Informal relationalism

Informal relationalism is inherent to ongoing behavioral IOAD and explains the successful collaboration despite the unsatisfying results of the implementation of the e-Supply Chain system in both FoodCo cases. In these cases, middle management boundary spanners attach more value to behavioral IOAD than to the partnering flavor of the new system. The sales manager of GlassCo takes the view that:

"The word partnership is often used as a buzzword, but I see it in a normal sense, in the day-to-day activities: you can call them and ask for a favor, and they can do the same: there is complicity".

The sales manager of CartonCo echoes this view:

"We do not consider it (the e-Supply Chain system) as something that changes our relationship with the client, it's just another tool...adaptations do take place in our daily activities, when there is a certain necessity, and we take a decision and all go in that direction...for me there is no other type of change...it is the constant adaptation to the necessities of the market".

The acknowledgement of behavioral IOAD, and more specifically informal relationalism, is thus relevant as it explains collaborative processes, even in those cases where technical support for these processes has not been very impressive.

Preliminary exploration of the underlying learning processes

Instances of interorganizational learning of the previous cases are resumed in appendix 2 under the headings of one sided learning and joint learning, derived from the previous literature review. At this stage of the research, we have mainly focused on learning processes underlying technical IOAD, leaving the processes underlying the behavioral dimension for subsequent papers. The bottom line of appendix 2 gives an overall judgment of the predominant type of learning.

Exploration of the impact of power on IOAD

Appendix 3 shows the different elements of power or dependency and how they take shape in each case. Buyer dependence on a particular supplier increases with: fewer alternate suppliers; a higher share of the supplier in the purchasing volume; a more strategic nature of supply; a more complex supply; and, a primary rather than secondary nature of the purchased package (given its direct impact on product image and functionality). Supplier dependence increases with a higher share of sales revenue from a particular buyer. The bottom line of appendix 3 resumes these elements in an overall judgment of the case regarding its dependence balance.

Returning to theory, we expect the dependence balance to impact the unilateral or bilateral nature of IOAD. Or more specifically, building upon the data on learning processes, we expect power to impact the degree of one-sided versus joint learning (Levinthal and March, 1993). In the following we will address the relationship between these two variables for each case, drawing from appendices 2 and 3.

The case FoodCo-CartonCo is buyer-dominated. This domination stems especially from the commodity nature of supply, and is illustrated by the sudden reduction of 30% of the exchanged volume given the loss of a tender by CartonCo. As a result, one-sided learning is predominant in this relationship. Whereas CartonCo readily accepts to implement the proposed systems of FoodCo, FoodCo is slow in implementing the one message which is beneficial for CartonCo. And, CartonCo unilaterally develops a parallel forecast system, given the low reliability of the data provided by FoodCo.

Furthermore, CartonCo models itself after FoodCo. These so called mimetic processes (DiMaggio and Powell 1983) are illustrated by its financial manager:

“The introduction of the tender-system implies an absolute change in our mentality...now we need to adapt as never before in a timely fashion to the requirements of our clients”

And echoed by their sales manager:

“... for me they (FoodCo) are very prepared and professional people, who may serve as reflex on things”

The case FoodCo-GlassCo, on the other hand, is rather reciprocal given the importance of FoodCo as a client for GlassCo, the lack of alternative suppliers and the complexity of supply. Consequently, when compared to the CartonCo case it shows (1) less one-sided learning in the previously described systems sphere, and (2) more instances of joint learning. The first point is illustrated by the critical tone of GlassCo when referring to the new system in contrast to the predominantly positive tone of CartonCo referring to the same system. The second point is illustrated by both companies jointly developing an implementation plan for consignment stock, as well as a strategy to deal with quality problems in the consumer market. Overall it can thus be claimed that this case is characterized by joint learning.

The case DairyCo-PakCo shows a slightly buyer-dominated dependence balance. The dominance stems from the fact that DairyCo enacts its purchasing power in a coercive fashion:

“We organized a meeting...I was alone representing DairyCo, whereas they had come 7 men strong from different parts of Europe...I have to admit that my legs were shaking. So I told them, in a three quarters of an hour lasting monologue, that if they were not going to improve the quality of supply, they would be kicked out as a strategic supplier...I communicated them our requirements...they were all ears.” (procurement manager DairyCo)

The balance is only slightly dominated, because the same procurement manager admits that:

“If we stop purchasing their product they can shut their plant, but if they discontinue production my plant will stop as well”

Nonetheless, despite the slight dominance of DairyCo, joint learning has been predominant over one-sided learning. After the initial threat of DairyCo to eliminate PakCo from the strategic suppliers list, the subsequent improvement activities are all characterized by a “we-feeling”; i.e. both partners have come together in a task force to jointly generate ideas to the existent problems, and they both feel that it is only by a joint effort that the situation can be improved:

“It’s like a train...it costs a bit of effort to start up, but once it’s riding we have generated idea after idea to improve our joint processes” (purchase manager DairyCo)

The case CheeseCo-LabelCo shows a reciprocal dependence balance, given the lack of alternate suppliers and the relative big share in sales/purchasing volume of both partnering organizations. The same case is characterized by joint learning, illustrated by the lead buyer of CheeseCo, when she refers to her problem solving style versus the one of LabelCo:

“It’s an interaction of course; you receive the approach which you give yourself”.

The marketing manager of CheeseCo echoes this point of view:

“The characteristics you value in a supplier have to be demonstrated by yourself as well”.

The case CheeseCo-FoilCo, on the other hand, is buyer dominated and characterized by the predominance of one-sided learning. FoilCo complains about this situation, and more specifically about its late involvement in the change project. Furthermore, FoilCo has to learn how to work with a new lithographer, in contrast to LabelCo, given the new coordination processes.

The case CoffeeCo-FlexbagCo is supplier-dominated. Consequently, one-sided learning predominates. According to the account manager of FlexbagCo:

“Well, the most important development in our relationship has been that we have proposed a metalized foil to be incorporated in the flexible bags for the coffee. CoffeeCo wouldn’t hear of this foil (given the pejorative impact on the environment) during a long time, but finally we have been capable of convincing them and they have accepted”.

Finally, table two categorizes the six cases along the two previously discussed dimensions: (1) dependence balance and (2) type of learning processes. All cases,

except the DairyCo-PakCo case, seem to fit well in the projected relationship. Therefore, a further refinement of the projected relationship is required. The following will make a start of that.

	Dominated dependence balance	Reciprocal dependence balance
One-sided learning	<ul style="list-style-type: none"> • FoodCo-CartonCo • CheeseCo-FoilCo • CoffeeCo-FlexbagCo 	
Joint learning	<ul style="list-style-type: none"> • DairyCo-PakCo 	<ul style="list-style-type: none"> • FoodCo-GlassCo • CheeseCo-LabelCo

Table 2 *Categorizing of cases along the dimensions of power (dependence balance) and IOAD (one-sided versus joint learning)*

A further (preliminary) refinement of the relationship between power and IOAD

The one thing that was surprising during the case study was that whereas the downstream relationship of producers has reached a certain degree of supply chain sophistication, the upstream relationship with the supplier is still rather basic. This strong decoupling of downstream and upstream learning processes is ventilated by a Purchasing coordinator of FoodCo:

"It's surprising that our clients take so much advantage of the theme of e-Supply Chain Management when they are talking to us, e.g. they demand continuous replenishment...at the same time we talk to our suppliers like "listen, we can't continue with faxes, we need a more reliable system to assure a continuous information flow between both companies".

In most cases, learning occurs when there are problems which have to be jointly resolved. The most common problems refer to product quality, either of supplied material or work in process of the buyer (when his machinery cannot successfully employ the supplied material). These problems lead to face-to-face contact of technical personnel of both partners and subsequent exploitative learning; i.e. the aim is to come to reliable supply and production processes by the fine-tuning of existing procedures. In the DairyCo-PakCo case the quality problems were sufficiently serious to threaten the

strategic supplier status of PakCo. Consequently, the answer of PakCo has also been very serious: several task forces were established to tackle the different complaints and requirements of DairyCo.

The lack of explorative joint learning is illustrated by CartonCo who, given an unreliable forecast of the demand of FoodCo, prefers to develop a parallel forecasting system rather than jointly improve the forecast with FoodCo. It is also expressed by its sales coordinator:

"we really know each other by now so well, that we are aware of our possibilities to negotiate response times and stock positions"

It is interesting to note in this regard that the three most involved boundary spanners of CartonCo are in their function on the average for about 23 years by now.

Only in two cases, learning is of an explorative nature and aims to redesign processes in order to improve performance of the partnership on the long run. In the CheeseCo-LabelCo case the project aimed to redesign coordination processes between both partners and to jointly arrive at a printable design of the new product image, is a clear example of the variance seeking nature of explorative learning. A new form of collaboration is established by trial-and-error and the associated novel coordination processes evolve through practice. All involved boundary spanners of this case emphasize the importance of openness to admit that something is unknown, illustrated by LithoCo (the mediating party) describing the process to arrive at the new printed design:

"We have dealt in an open manner with unknown fields, and have jointly arrived at solutions."

Once the project to establish new printing procedures is coming to an end, CheeseCo pushes both suppliers to evaluate the process in a report in order to prevent future problems; i.e. what has gone wrong and why, and, of whom is the responsibility? In that sense, CheeseCo is turning to exploitative learning or the fine-tuning of procedures.

The second case that shows instances of explorative learning is the DairyCo-PakCo case. In this case a project is recently initiated aiming to streamline and optimize supply chain processes between both partners. An external person is hired to analyze current processes and propose a new framework for collaboration. Furthermore, boundary spanners of DairyCo participate from time to time in the taskforces of PakCo in order to

improve the interchange of information and develop novel solutions for collaboration. This intensive information exchange is also exemplified by the frequent and during phone calls of the procurement manager of DairyCo and the account manager of PakCo; i.e. intended simple questions on punctual themes almost always end up in large discussions on the general functioning of the partnership.

Thus, returning to the deviant relationship between dependence balance and IOAD in the DairyCo-PakCo case (see table 2) the question was “what makes this case distinct from the other cases; i.e. why does the buyer domination not lead to one-sided learning processes”? The answer to this question lies in the exploratory nature of learning processes in this case, something which was only observed in a lesser degree in one other case. It seems that the conscious and joint approach to supply chain redesign (jointly exploratory learning) and the actual dedication of resources to change projects make the difference. Thus, in the presence of joint exploratory learning, power seems to lose its power as an explanatory variable.

CONCLUSIONS

This paper aimed to develop a comprehensive framework of IOAD to facilitate a fuller comprehension of the functioning and success of partnerships. Based on a review of institutional economy, organizational learning, and industrial marketing literature, we reason that IOAD is constituted by a technical and a behavioral dimension and that it is grounded upon learning. Power is involved in the framework given its pervasive impact on the unilateral versus bilateral nature of IOAD. The IOAD framework contributes by its overarching nature, integrating previous technical as well as behavioral oriented studies, and by clarifying the role of learning.

Subsequently, the framework is explored through multiple embedded dyadic cases in the European food industry, a scarcely studied though relevant industry given its size and dynamism. Case data show that a classification system of behavioral IOAD may be constituted by shared values, trust, and informal relationalism. Acknowledgement and understanding of behavioral IOAD facilitates the explanation of several paradoxical situations in the cases, e.g. the unsatisfying results of the implementation of the partnership flavored system on the one hand, but the continuous improvement of the partnership at the other, given the ongoing processes of trust building and informal

relationalism. Thus, a second contribution of the study lies in its advancement towards a fuller understanding of partnerships.

After that, we have assessed the presence of one-sided and joint learning processes in the cases and defined the predominant type of learning per case. Next, by determining buyer dependence as well as supplier dependence based on several criteria, an overall judgment of dependence balance could be made for each case. Subsequently, the relationship between the dependence balance and learning processes could be established. It was expected that dominated relationships would present one-sided learning, whereas reciprocal relationships would present joint learning (Levinthal and March, 1993). All cases, except one, confirm this expectation. Further analyses of the deviant case shows that the presence of exploratory learning (Holmqvist, 2004; March, 1991) causes the dominant buyer to jointly learn with the more dependent supplier. More specifically, the conscious approach to process redesign in the case and the actual dedication of resources to change projects make the difference. Other cases did not present such a focus on supply chain improvement and the associated dyadic scope of thinking and acting. A third contribution of the paper lies thus in the elaborated relationship between power and IOAD, possibly weakened by exploratory learning processes. Nonetheless, these results are preliminary and more research is needed to strengthen this claim.

A potential limitation of this study lies in its cross-sectional character, whereas a longitudinal approach seems the most appropriate for analyzing adaptation. Nonetheless, we think that we have dealt in an adequate way with this potential limitation by involving cases which find themselves in different stages of a relationship (the relationship duration of the cases varies from 3 to 50 years).

All together, we hope to have provided a stimulating framework to study the relationship between adaptation, learning, and power. Our further research lines will detail the power phenomenon in cases characterized by joint learning.

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Appendix 1 Key characteristics case studies

	Case 1: FoodCo-CartonCo	Case 2: FoodCo-GlassCo	Case 3: DairyCo-PakCo	Case 4: CheeseCo-LabelCo	Case 5: CheeseCo-FoilCo	Case 6: CoffeeCo- FlexbagCo
Exchanged material	Compact carton (secondary packaging)	Glass little pots (primary packaging)	Paperboard package for fresh pourable products (primary packaging)	Printed labels (primary packaging)	Thin printed foils (primary packaging)	Flexible paper look bags (primary packaging)
Nationality of respective head offices	Swiss - American	Swiss - French	Dutch - Norwegian	Dutch - Norwegian	Dutch – Swiss	Dutch - American
Country of residence of subsidiaries of cases	Spain	Spain	Netherlands	Netherlands	Netherlands	Netherlands
Turnover buyer versus supplier (Euros) (refers to respective subsidiaries)	1,500 million versus 24 million	1,500 million versus 500 million	3,500 million versus 600 million	300 million versus 6 million	300 million versus 10 million	9 million versus 90 million
Duration of relationship	40 yrs	50 yrs	25 years	25 years	3 years	15-20 years
Number of interviews	10	5	3	6	5	3

Appendix 2 One sided learning versus joint learning

	FoodCo-CartonCo	FoodCo-GlassCo	DairyCo-PakCo	CheeseCo-LabelCo	CheeseCo-FoilCo	CoffeeCo-FlexbagCo
One sided learning						
	CartonCo implements the e-systems as proposed by CartonCo	FoodCo implements the e-systems as proposed by CartonCo, but is not a heavy user (not much learning takes place)	DairyCo uses filling machines of PakCo and technology know-how of PakCo	CheeseCo has adapted its product design to be printable on the machinery of LabelCo	FoilCo has to use another lithographer to adapt coordination processes	CoffeeCo has to follow FlexbagCo to new production sites (3 different facilities in a row)
	CartonCo models itself after FoodCo (adopts the same values)	FoodCo takes into account the inflexibility of production of GlassCo				CoffeeCo adapts its planning to take into account inflexibility of supply
	CartonCo implements consignment stock upon request of FoodCo					CoffeeCo has adapted its package to the possibilities of FlexbagCo
	CartonCo develops a parallel forecast system					
Joint learning						
	FoodCo delays the implementation of an e-message which would improve joint planning processes (-)	The partners develop a joint strategy regarding a quality problem in the consumer market	Both companies participate in a project to redesign their relationship in all its aspects	Both companies participate in a project to optimize their coordination processes	FoilCo is too late involved in the project to optimize coordination processes (-)	The service level of supply has remained on the level of ten years ago (-)
		The partners jointly develop an implementation plan for consignment stock	Both companies jointly develop a customized product for PakCo	Both companies have adjusted their problem solving style		
			PakCo establishes task forces to deal with requirements DairyCo			
Overall	One sided learning	Joint learning	Joint learning	Joint learning	One sided learning	One sided learning

(-): a possibility for joint learning is not exploited

Appendix 3 Dependence balance in different case studies

	Case 1: FoodCo-CartonCo	Case 2: FoodCo-GlassCo	Case 3: DairyCo-PakCo	Case 4: CheeseCo-LabelCo	Case 5: CheeseCo-FoilCo	Case 6: CoffeeCo- FlexbagCo
Buyer dependence						
Complexity supply	Low	Medium	Medium	Low	Low	Medium
Alternative sources of supply	Some 8-10 competitors	1 competitor	<ul style="list-style-type: none"> 0 immediate suppliers given the volume and tailor made character of supply. 2 long range alternative suppliers (change is technically complex and time consuming) 	<ul style="list-style-type: none"> Cero 	<ul style="list-style-type: none"> For one supplied commodity product, a large number of alternative suppliers exist For another, more specialized product, some 6 alternative suppliers exist 	<ul style="list-style-type: none"> Cero on the short run (other suppliers have a much bigger minimum order quantity) 4-5 on the long run Idiosyncratic investments to be able to work with package material of FlexbagCo
Financial and strategic importance of supply:	<ul style="list-style-type: none"> Low (less than 1% of total purchasing volume). Secondary packaging 	<ul style="list-style-type: none"> Low (less than 1% of total purchasing volume) Primary packaging 	<ul style="list-style-type: none"> Strategically important (10% of purchasing volume) Primary packaging 	<ul style="list-style-type: none"> Primary packaging 1-2% of purchase volume 	<ul style="list-style-type: none"> Primary packaging Relatively more than LabelCo 	<ul style="list-style-type: none"> 2,5-5% Primary packaging Package aids in building the product image
Supplier dependence						
Percent of sales revenue from a particular buyer	High (10-12%)	Less than in the case of CartonCo	High (12-14%). DairyCo is by far the biggest client.	Aprox. 3%	n.a. (FoilCo is interested to also directly deliver (and thus increase share))	<1% (Market cannot grow more, thus every client counts)
Overall: type of dependency relation	Buyer-dominant	Reciprocal	(slightly) Buyer-dominant	Reciprocal	Buyer-dominant	Supplier dominant