

Value creation and appropriation in asymmetric alliances: the case of tech startups

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Abstract. This study of asymmetric supplier-customer alliances examines how different tensions and dimensions within the alliance shape value creation and value appropriation. This question would appear to be fundamental—as for many startups, successful launch and growth hinge on the ability to build lasting alliances with key industry players.

The authors use resource dependence theory to carry out an analysis of two polar cases—one success story, one failure—involving tech startups and large customers. By analyzing the elements that impact value creation and value appropriation, we contribute to identifying: (1) the sources of asymmetry in vertical alliances—*relative supplier-customer characteristics* (2) two conditions of success when it comes to overcoming the tensions and problems brought about by asymmetries—*learning with large customers and customer-specific investments* and (3) positive results—*dual value appropriation* when the conditions for alliance success are properly implemented.

In this paper, we shed light on this novel concept of dual value appropriation—where both firms aim for superior joint value creation as the basis for their own competitiveness. Startup and customer firms may fully appropriate jointly generated value, in a relationship of symbiotic interdependence. We discuss the implications of these findings and compare them with existing resource dependence studies which delve into the subject of asymmetries. It should be noted that this research considers points of view from both supplier and customer sides of the alliance.

Keywords: alliances, asymmetry, dependency, dual value appropriation

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INTRODUCTION

The convergence of technology and market globalization has changed both the playing field and the rules of the game. The upshot: ongoing, seamless innovation has become a strategic priority. It is increasingly difficult for firms to develop and exploit resources in isolation; innovation requires cooperation. Yet asymmetry and power imbalance in business alliances make co-creation an elusive goal.

The tech sector is salient, in this sense, due to the potential for innovation and new knowledge creation; more and more, small tech startup suppliers collaborate with industry leaders (Chen & Chen, 2002; Stuart 2000). To this end, startups tend to specialize—focusing on core competencies—while repositioning themselves in value networks with a view to enhancing knowledge (Calia, Guerrini, & Moura, 2007; Das &

Kumar, 2010; Möller & Svahn, 2006). In interdependent environments of this sort, efficient relationship management is seen as a source of competitive advantage (Polo & Cambra-Fierro, 2007).

Supplier-customer alliances, then, are a vehicle for accessing and leveraging resources—including the information, markets and technology required to create value (Kim, 2014; Palmatier, 2008). Collaboration between tech startups and well-established firms can potentially facilitate not only the transfer of existing knowledge but new knowledge creation as well (Anand & Khanna, 2000; Grant & Baden-Fuller, 2004; Mowery, Oxley & Silverman, 1996; Padula, 2008). This is achieved through increased cooperation and learning between suppliers and customers.

Resource dependence theory (RDT) sustains, however, that in such contexts managing interdependencies is no easy task. Frequently, dependence occurs when a firm needs critical resources which are controlled by external organizations. RDT brings two key ideas to light: first, the importance of given resources for given firms; second, the control exerted over such resources by a small number of external organizations (Pfeffer & Salancik, 1978). Tech startups who sell to large customers, for instance, are dependent on those customers for market know-how. Large customers, in turn, depend on startups for access to innovative technologies.

In such a context, however, tech startups face both greater dependency on complementary resources and higher risk of misappropriation of co-created value than do large firms. They must also meet the challenges of collaborating with powerful customers with more resources and broader social networks (Klijn, Reuer, Buckley, & Glaister, 2010). Hence, learning to work with industry leaders is paramount, and one of the secrets of startup success (Perez, Whitelock, & Florin, 2013).

For some time, research has informed our understanding of inter-firm learning in the context of more symmetric and balanced supplier-customer alliances—such as, for instance, the alliance between Nestle and Coca-Cola to produce and distribute ready-to-drink tea globally (Reuer, Zollo & Singh, 2002). Symmetric alliances exhibit more affinity in terms of organizational processes, long-term objectives and strategic plans (Ariño & de la Torre, 1998; Das & Teng, 2002).

Alliances between startups and large customers, in contrast, are fraught with tensions and barriers—springing from different organizational cultures, priorities and strategies—that can place potential for value co-creation in check. And even when value is created, it may not be fairly distributed (Prashantham & Birkinshaw, 2008). Hence, startups are especially prone to having to overcome a wide range of hurdles and risks. A number of authors call for further research on value creation and appropriation in asymmetric alliances involving firms with limited resources and experience—like tech startups—with a view to fostering innovation (Ariño Ragozzino & Reuer, 2008; La Rocca, Ford & Snehota, 2013).

This question appears to be significant; successful launch and growth of countless tech ventures—both in the US and Europe—hinge on the ability to nurture mutually beneficial alliances with industry players (Yli-Renko, Autio & Sapienza, 2001). Consequently, there is a need to delve deeper into concepts like interdependence and asymmetry with a view to better understanding how underlying tensions and dimensions within asymmetric alliances shape value creation and appropriation. This, in essence, is the basis for our research question. We seek to contribute to filling this lacuna by undertaking an empirical analysis of two polar cases—one success story, one failure—representing the asymmetric alliances

between startup suppliers and large customers. In our analysis we consider both sides of such alliances.

The paper opens with a review of the concepts of *interdependence*, *asymmetry* and *joint dependence*—in value-creating alliances. Section 3 takes a closer look at the incentives, risks and challenges startups face in asymmetric supplier-customer alliances. Sections 4 and 5 review studies of value creation and appropriation. In Section 6, we present an overview of the case study methodology used, together with a brief description of the two alliances studied. Case study methodology is the method of choice for studying complex phenomenon such as inter-firm learning (Ariño & de la Torre, 1998; Roseira, Brito & Ford, 2013). Finally, we present and provide a discussion of results. The paper closes with limitations and potential future lines of research.

INTERDEPENDENCE, ASYMMETRY & JOINT DEPENDENCE IN VALUE-CREATING ALLIANCES

Interdependence exists whenever a firm does not completely control all of the resources and conditions required to achieve desired outcomes (Pfeffer & Salancik, 1978). Resource dependence theory (RDT) posits that dependence only occurs when a given resource is important for a given stakeholder company and when said resource is controlled by relatively few organizations. Simply put, Firm A is dependent upon Firm B in proportion to Firm A's need for resources that Firm B can provide, and in inverse proportion to the availability of alternative firms capable of providing the same resources (Pfeffer & Salancik, 2003).

Interdependence has increased in today's dynamic environments where firms tend to specialize and enter supplier-customer alliances with a view to complementing knowledge and create value (Grant & Baden-Fuller, 2004; Lane, Koka, & Pathak, 2006; Powell & Smith, 1996). We adopt the definition proposed by Blocker, Flint, Myers & Starter (2011) where the value created is seen, in simple terms, as the perceived trade-offs between benefits and sacrifices— deriving from either the focal alliance or from connected networks which the alliance impacts.

Different authors recommend viewing interdependence as comprising two distinct dimensions, namely, *asymmetry*—the difference in supplier-customer dependence on each other; and *joint dependence*—the sum of dependencies, regardless of whether the two firms' dependencies are balanced or imbalanced (Casciaro & Piskorski, 2005; Gulati & Sytch, 2007). We adopt the general definition of asymmetry provided by Pfeffer and Salancik (2003: 53): "Asymmetry exists in the relationship when the exchange is not equally important to both organizations". Asymmetry is primarily grounded in the logic of power, since unequal dependence would cause power imbalances likely to be detrimental to the weaker firm. This line of thought has given rise to a large body of research on how firms benefit from being in a position of power and claim greater value in the distributive process (Lepak, Smith & Taylor, 2007; Lindgreen, Hingley, Grand, & Morgan, 2012).

On the other hand, although joint dependence originally followed the logic of embeddedness, tight collaboration and aggregate performance, organizational scholars have remained focused on understanding the underlying power dynamics, and many studies have continued to examine the implications of joint supplier-customer dependence through the prism of power and influence (Casciaro & Piskorski, 2005).

Findings from a range of early studies in the context of the US automotive industry show that asymmetrically dependent suppliers were audited by large manufacturers like General Motors—who held a power advantage and used it to ensure suppliers did not earn disproportionate profits (Mudambi & Helper, 1998; Perrow, 1970). In contrast to this competitive approach to power, other scholars hint at the importance of joint dependence in value creation—providing compelling evidence of the benefits of close collaboration between Japanese car manufacturers and their suppliers. This close, non-adversarial approach, characterized by high mutual dependence, has led some scholars to identify such traits as a source of superior value creation for Asian car manufacturers vis-à-vis their US counterparts (Dyer, 2000).

Tech startups selling to large customer firms depend on these organizations for market know-how. Large customer firms, in turn, are dependent on startups for access to innovative technologies. The alliance, however, is usually more important for the startup as it often represents a larger proportion of its sales (Emerson, 1962; Pfeffer & Salancik, 2003). In this asymmetric supplier-customer context, the predominant view has focused on power dynamics; the result is the large customer being in a position of claiming greater value in a distributive process (Baum, Calabrese & Silverman, 2000; Fischer & Reuber, 2004; Prashantham & Birkinshaw, 2008). The situation is very different in alliances between well-established firms, where neither organization has a significant power advantage—reducing the likelihood that one will control the other's resources and strongly influence behavior and financial outcomes. Asymmetry is often seen as more problematic for value creation because it is associated with greater instability and conflicts (Rokkan & Haughland, 2002). Such studies aimed to make suppliers more aware of the challenges of dealing with large customers' extended networks (Blomqvist, 2002; Chen & Chen, 2002).

All of that being said—given that many tech ventures succeed despite facing power imbalances—there is a need for further exploration of the joint dependence dimension with a view to understanding value creation in asymmetric supplier-customer alliances. Now that the concepts of interdependence, asymmetry and joint dependence in supplier-customer alliances have been introduced, we will take a closer look at the principal incentives, risks and challenges startups face when collaborating with large customer firms.

INCENTIVES, RISKS & CHALLENGES IN ASYMMETRIC SUPPLIER–CUSTOMER ALLIANCES

Table 1, found at the end of this section, summarizes the challenges startups must overcome in their value-creating activities with large customers—illustrating how the situation differs from that faced by large firms in symmetric alliances. We will cover those aspects in detail in the coming subsections.

INCENTIVES: RESOURCE COMPLEMENTARITY

Savvy downstream customers represent a unique opportunity for startups to access larger customer resource networks and develop solutions they cannot normally develop on their own (Ariño et al., 2008; Blomqvist, Hurmelina, & Seppanen, 2005). Large, demanding customers drive startups to boost competitiveness by continuously producing high-quality solutions in shared projects (Blomqvist, 2002).

Conversely, startups provide large companies with opportunities for increased organizational flexibility, along with the innovative technology, products and services required to enhance competitive positioning. Alliances with tech startups may also lower the inherent risks new technology projects pose—and postpone or entirely eliminate the need to hire new employees. This is due to the fact that startups serve to extend large firms' personal employee networks (Blomqvist et al., 2005; Prashantham & Birkinshaw, 2008).

RISKS: OPPORTUNISM

While asymmetric alliances between startups and large customers are increasingly common—and the potential benefits widely recognized (Baum, Calabrese & Silverman, 2000; Prashantham & Birkinshaw, 2008)—such alliances face inherent risks, particularly for startups. Startups often stake their reputation and future success on the integrity and willingness to find win-win solutions of their larger partners (Prashantham & Birkinshaw, 2008). Yet, while alliance success and startup success are inexorably intertwined, large, well-established companies rarely have as much to lose. They are less likely to fall victim to opportunism and have effective ways of initiating legal actions, refusing further collaboration, and finding alternative partners (Baum, Calabrese & Silverman, 2000; Fischer & Reuber, 2004). In such a context, learning to work with large customers becomes critical.

CHALLENGES: DIFFERENCES IN LONG-TERM OBJECTIVES, ORGANIZATION & STRUCTURE

Asymmetric alliances face a particular set of hurdles that can make them extremely difficult (Prashantham & Birkinshaw, 2008). First, working with large, well-established customers—who often flaunt a good reputation and financial muscle—requires dealing with very different organizational processes and structures. Decision making in large organizations is fraught with internal coalitions and conflicting interests. Strategic decisions are often based almost exclusively on the will (or whim) of powerful executives and their agendas. Decision makers engage in the tactical use and control of information and knowledge flows (Eisenhardt & Zbaracki, 1992). This represents an additional challenge for startup firms who frequently have only restricted access to top customer firm management (Katila, Rosenberger & Eisenhardt, 2008).

Divergent long-term objectives are another hurdle. Larger customers have explicit strategic plans, established market positions and consolidated procedures. Startups, in contrast, are agile and opportunistic; their horizon is measured in months not years. Finally, larger customers make a clear distinction between line and staff roles, employ many functional specialists, and establish explicit processes for every activity. Startups are full of generalists; jacks-of-all-trades who get things done via informal, ad hoc processes (Prashantham & Birkinshaw, 2008).

Compared dimensions	Asymmetric alliances between start-ups and well-established firms	Symmetric alliances between well-established firms
Resources	Start-ups lack the reputation, financial muscle and human resources of their potential partners.	Resource profiles are likely to be more balanced.
Long-term objectives	Startups are opportunistic and agile; their planning horizon is measured in months not years; and the prospect of being acquired is often very real.	Both firms usually have explicit strategic plans, established market positions and well-oiled operating procedures. The mindsets of both companies are better aligned.
Organization and Structure	Start-ups are full of generalists, many of whom wear multiple hats, and they get things done through <i>ad hoc</i> and informal processes. As a result there are rarely clear counterparts for the start-up firm manager to talk to in the well-established (sometimes, large corporation) and the joint execution of everyday activities can be problematic.	Firms may have a clear separation between line and staff roles, many functional specialists and explicit processes for every activity.
Power	Some net power accrues to the less dependent organization, usually the well-established and large firm. This power may be employed to obtain the lion's share of the jointly created value.	Although opportunistic behavior still exists, dependence and power are better balanced and/ or firms have experience to manage it. As a result, the likelihood of one firm dominating the other is lower as asymmetries with respect to one resource can be counterbalanced because of corresponding asymmetries for other resources.
Communication	Lack of access and attention. Startups may have restricted access to the attention of key decision makers in the counterpart.	Executives of equivalent stature and/ or responsibility will happily return each other's calls

Table 1 - Asymmetric versus symmetric alliances

Some asymmetric alliance scholars call for a closer look at how different dimensions within these alliances shape value creation and appropriation (Ariño et al., 2008). In the next part of the paper we will review the concepts of *complementarity*, *learning with customers* and *customer-specific investment*. On the whole, these aspects have been discussed in the context of new value creation and appropriation in symmetric alliances. Such concepts—and their theoretical correlatives—provide the organizational framework for developing interview protocols; they will also serve as the point of departure for exploring asymmetric alliances.

VALUE CREATION

RESOURCE & ORGANIZATIONAL COMPLEMENTARITY

Startups in interdependent alliances can create value both by accessing and leveraging larger customers' complementary resources (e.g. knowledge and market know-how), and the resources embedded in their networks (Grant & Baden-Fuller, 2004; Kim, 2014; Mowery et al., 1996; Padula, 2008). Such alliances may not only facilitate the transfer of

existing knowledge; they can foster the creation of new knowledge as well (Anand & Khanna, 2000). Startups and large customers are complementary if one has strengths where the other has weaknesses (Hamel, 1991). The fundamental logic behind complementarity, then, is the notion of resource differentiation.

From a somewhat different perspective, Dyer and Singh (1998) agree that complementary partners possess distinct resources—typically suppliers provide tech and product know-how while customers contribute market knowledge. However, the key ingredient here is *synergy*, these authors argue. Similarly, a number of other authors (Ariño & de la Torre, 1998; Dyer & Hatch, 2006) claim the question is not whether firms have complementary resources or not but whether they are able to identify and combine resources successfully. The literature has found that it is not enough for firms to possess strategic complementary resources; organizational complementarity or *fit* is essential as well if startups and customers are to fully benefit from alliances (Doz, 1996; Dyer & Singh, 1998; Nohria & Garcia-Pont, 1991).

Organizational complementarity, unlike resource complementarity, follows the logic of compatibility and similarities with respect to strategies and organizational culture (Larson, Bengtsson, Henriksson, & Sparks, 1998), goals (Das & Teng, 2002), and communication processes (Goerzen & Beamish, 2005), for instance. If suppliers and customer firms seek to reach business goals, both parties must enter the relationship with strong resolve to collaborate and share similar views regarding the benefits and dividends to be expected from alliance (Chassagnon, 2014; Saxton, 1997). Shared objectives and perceived benefits comprise a complementary dimension which has a positive impact on knowledge exchange and learning (Lubatkin, Florin, & Lane, 2001; Saxton, 1997).

In the case of symmetric alliances, it has also been noted that when business strategy and goals are too similar, the chances of rampant opportunism and inter-partner conflict increase. Lack of complementarity, or fit, of this sort will inevitably lead to information being withheld and the potential for value creation and learning diminishing.

LEARNING WITH CUSTOMERS

Learning about customers, and how to work with them, is essential to joint value creation (Perez et al., 2013). Several authors make a distinction between learning *what*, or cognitive learning—knowledge which firms cannot access on their own—and learning *how*, or behavioral learning—the relational norms that contribute to improving communication processes and building trust (Ariño & Doz, 2000; Inkpen & Pien, 2006). Learning with customers is arguably an essential prerequisite for joint knowledge creation and alliance performance (Ballantyne, Frow, Varey, & Payne, 2011). Moreover, with regard to knowledge and learning, Lane and Lubatkin (1998)—building on Cohen and Levinthal's (1990) concept of absorptive capacity—contend that suppliers do not have the same ability to learn from all customer firms. Suppliers learn more from those customers with whom they share common knowledge and informational bases (Cohen & Levinthal, 1990; Lane & Lubatkin, 1998).

Although learning to work with large customers may be vital for startups, differences in organizational processes, dependence and power are believed to be more problematic than previously thought, as discussed in the last section. Simply put, the potential benefits of wider access to cognitive resources are often overshadowed by conflicts rooted in social integration and communication problems.

CUSTOMER-SPECIFIC INVESTMENTS

Building a relationship and understanding the customer firm's context are necessary conditions for value creation. But this—in and of itself—is not enough. The business alliance model which Japanese car manufacturer Toyota and its suppliers have adopted is a good example of how firms aiming to maximize alliance-based value must commit to making additional, relationship-specific investments (Dyer & Nobeoka, 2000).

Customer-specific investments are paramount to bringing alliances in close—rather than remaining at arm's length, where it is all too easy for firms to switch trading partners for the simple reason that other sellers might offer similar products (Dyer & Singh, 1998; Wagner, Eggert, & Lindemann, 2010).

Customer-specific investments have also been found to be a key factor affecting collaboration dynamics in supplier-customer alliances. Examples include the active role small tech firm management plays in knowledge-acquisition activities and deliberate efforts to combine resources (Ariño et al., 2008).

Relation-specific investments allow firms to explore new ways of combining and sharing knowledge and skills, so as to co-create industry-changing innovations. At the same time, suppliers assume higher risks as investments become more customer-specific and their value in alternative uses decreases. This is particularly the case in asymmetric alliances where larger customers can behave opportunistically, leveraging their negotiating power to their sole benefit (Johnsen & Ford, 2008; Söllner, 1998).

To minimize opportunistic behavior, firms often sign elaborate contracts designed to serve as safeguards (Dyer & Ouchi, 1993). Trust-building, however, is always the best, most cost-effective way to shore up customer-specific investments (Alvarez & Barney, 2001). Other authors sustain that opportunistic inclinations can be effectively offset by attitudinal input since suppliers do not enter business alliances with customers blindly—nor, naturally, out of a desire to get trapped and exploited. It seems attitudinal input or “shared values” with regard to collaboration and relational norms are effective safeguards as well (Söllner, 1999).

In short, asymmetric supplier-customer alliances can be seen as collaborative agreements driven by the logic of strategic resource needs and social opportunities. That being said, such alliances are plagued with hurdles that challenge the conventional wisdom regarding trust-building and value co-creation.

VALUE APPROPRIATION

Scholars make a distinction between *value creation*—presented in Section 2—and *value appropriation*. Value appropriation can be defined as the net value successfully captured by a focal firm. By this definition, customers might capture more value due to greater value creation with suppliers, more effective appropriation of the value pie, or a combination of the two. Unlike value creation—a win-win scenario—value appropriation implies partners divvying up the value pie; in other words, a larger slice for one means a smaller slice for the other (Söllner, 1999; Wagner et al., 2010). In the game theory terminology this is known as a *zero-sum game*.

The literature on value-creating alliances goes to great lengths to sort out the conundrum of who should appropriate the value created and how to keep competition from hindering knowledge transfer and innovation (Delerue & Lejeune, 2013; Norman, 2002). The general consensus is that firms may have to divvy up the value they co-create with their partners

(Bowman & Ambrosini, 2000; Mizik & Jacobson, 2003; Wagner et al., 2010).

Asymmetric alliance scholars tend to place the emphasis on power dynamics: David vs. Goliath. This perspective is reflected in the titles of a number of well-known articles: "Dancing with Gorillas" (Prashantham & Birkinshaw, 2008), "Buyer Dominated Relationships" (Holmlund & Köck, 1994) and "Swimming with Sharks" (Katila et al., 2008), among others. Alvarez and Barney (2001) recommend five steps that small tech firms should take to mitigate the threat of disproportionate appropriation by a larger customer. Three of them—*going it alone*, *slowing the large firm's rate of learning* and *signing contracts*—clearly limit the potential for learning. The other two—*building trust* and *contributing innovative cross-technology skills*—seem to be well aligned with learning but require significant investment, especially in the case of asymmetric alliances.

Further study of supplier-customer alliances reveals the basic premise that business is about appropriating value, not about passing that value on to someone else. Scholars adopting a resource-based view (RBV) (Barney, 1991) have focused attention on identifying the types of resources that can act as isolating mechanisms and—in cases where they are rare, inimitable, irreplaceable and valuable—putting limits on competition. An isolating mechanism is any physical, legal or knowledge-based barrier that may prevent collaborators/competitors from capturing the majority of the value created (Lepak et al., 2007). Other authors sustain that companies are only successful when they leverage power over their partners (Cox, 1999).

In the startup large-customer alliance context, net power tends to accrue to the customer, who may use it to its sole benefit. Startups may have no other choice than to comply with the norms and conditions imposed upon them by their more powerful customers if they wish to keep the alliance alive (Easton, 2002; Holmlund & Köck, 1994).

In short, alliances characterized by high degrees of asymmetry and power imbalance can lead to instability and value appropriation problems for startups (Chen & Chen, 2002; Johnsen & Ford, 2008). On the other hand, if the inherent imbalance present in so many alliances were insurmountable, startups would be less enthusiastic about developing alliances with large customers than they are, and these alliances would not last. This is clearly not always the case; startups do develop asymmetric alliances, tolerate power imbalance and grow (Blundel & Hingley, 2001). Consequently, as we anticipated in our introduction, there is a need to better understand how different tensions and dimensions within asymmetric alliances shape value creation and value appropriation.

RESEARCH METHOD

Case studies are considered the most appropriate tool in the early phases of theory development when key variables and their relationships are to be explored (Gibbert, Ruigrok, & Wicki, 2008; Yin, 2003). Case studies have been frequently used in value creation and inter-firm learning studies (Ariño & de la Torre, 1998; Doz, 1996; Dubois & Araujo, 2007; La Rocca et al., 2013; Polo-Redondo & Cambra-Fierro, 2007; Roseira et al., 2013; Yan & Gray, 1994). Hence, the case study approach seems a good fit in our quest to understand how underlying dimensions within asymmetric supplier-customer alliances shape value creation and value appropriation.

CASE SELECTION

We chose a unique context involving small suppliers, with limited resources and experience (Baum, Calabrese & Silverman, 2000; Fischer & Reuber, 2004; Holmlund & Köck, 1994; Söllner, 1998; Prashantham & Birkinshaw, 2008). These small firms were tech startups engaged in alliances with large, international and well-established customer firms. We sought to identify the presence of asymmetry based on the characteristics of each firm in the alliance (the differences are presented in Table 2), and to assess that the alliance was more important to the young tech firm based on the fraction of the business done with the large customer.

We chose two cases—a success story and a failure: two joint projects where new product or tech developments were expected to take place. In each case, the focus is on the collaboration and interaction between a young tech startup and a large, well-established customer firm.

Customer firm names were provided by the selected startups. We opted to only include alliances in our study where both firms showed a willingness to be interviewed.

Exploratory interviews conducted with key informants in one of the selected case studies prior to the formal interview phase revealed that both the startup and the customer firm held contrasting views of their partner. Initial comments indicated a failed alliance (Case 2):

“They have used their exclusivity contract to take advantage of us. We are looking for ways to reduce our sales dependency and terminate this relationship as soon as possible as it has clearly not contributed to achieving our objectives.” (Case 2 startup viewpoint)

“They have unacceptable response times since they now have other customers and special projects to look after. [...] We have made an important investment to integrate their software and now others are taking advantage of it.” (Case 2 customer firm viewpoint)

Comments made during our conversations with key players in Case 1 firms, on the other hand, express a much more positive view:

“We’ve gone through hard times but, little by little, our efforts seem to be starting to pay off.” (Case 1 startup viewpoint)

“Things haven’t always been smooth but they are honest, open and responsive. We are considering new projects for the upcoming year and we would like to work with them again.” (Case 1 customer firm viewpoint).

The tech sector was an appropriate choice because rapid changes in market and product developments make knowledge creation in exchange partnerships particularly salient (Yli-Renko et al., 2001). One success story and one failed case were chosen for theoretical reasons, including: replication, contrary replication, extension of theory and elimination of alternative explanations (Leonard-Barton, 1990; Yin, 2003). The fact that both cases represented different dynamics of the same phenomenon—i.e. value creation processes in asymmetric alliances (Ragin, 2000)—was a good fit to our research goals, allowing us to

investigate the interrelationships among constructs (Eisenhardt & Graebner, 2007).

An introduction to the cases is provided next, followed by Tables 2 and 3. Table 2 details key features of the firms involved, including number of employees, products, markets, competitive position and strategic motivation for engaging in the alliances. Table 3 summarizes the period covered, goals, resources contributed by suppliers and customers, and the initial contractual conditions. Table 4 lists the formally interviewed informants, indicating their company of affiliation, position and years of service in the company.

TWO CASE STUDIES: A BRIEF INTRODUCTION¹

CASE 1: Startup1-BSM

Between March 2010 and December 2012, Startup1—a Madrid-based firm founded by a young entrepreneur specializing in multimedia applications—and BSM, the Spanish branch of a multinational pharmaceutical company with over 900 employees, worked together on a project known as Quorum (the Spanish word for *consensus*). The name was used because both firms agreed a high degree of consensus was essential for the project to succeed. The Quorum project aimed to build a common Internet infrastructure that could be used by all the different medical areas at BSM. The intention was to support BSM's sales efforts and to provide a single online platform for doctors—regardless of their field of specialization.

In 2009, prior to working with Startup1, BSM had created an e-business unit and appointed a highly recognized in-house doctor as e-Business Manager. The unit was small, allowing it to collaborate across the entire medical spectrum—from wound therapeutics, psychiatric disorders and cancer to cardiovascular, immunology and infectious diseases—and to tap external Internet-expert suppliers. Startup1 had previously had indirect experience with the pharmaceutical industry by way of the publishing sector; however, the Quorum project with BSM represented Startup1's first direct access to an industry that allocates substantial budgets to product introduction.

CASE 2: Startup2-TISA

Between January 2009 and December 2011, Startup2—a small entrepreneurial company based in Barcelona—and TISA, the hospitality division of a leading multinational group manufacturing and selling locking solutions worldwide, collaborated in the commercialization of tech solutions in the Spanish hospitality sector. The objective was to take advantage of Startup2's innovative product portfolio and TISA's dominant position in the industry. The startup has a strong tech orientation and had developed an Optical Character Recognition (OCR) solution for automatically reading and storing information. TISA's electronic locking solutions, e.g. hotel room keys, incorporate software and constitute the company's main product line—over 80% of sales—sold under the firm's brand label. TISA has relationships with major hotel software developers, hotel chains and a network of multi-product independent distributors.

1. Firm identities are withheld for the sake of confidentiality

	CASE 1		CASE 2	
	Startup1		BSM	
	(Small supplier)	(Large customer)	Startup2 (Small supplier)	TISA (Large customer)
Date of establishment	2005	1986	2006	1994
Number of employees	15	900	10	1014
Products	E-business multimedia software applications.	Pharmaceutical and related health care products covering different medical areas (e.g. Neuroscience, oncology, cardiovascular).	OCR (optical character recognition system) based solutions.	Electronic-based locking solutions. Mechanical-based locking solutions.
Product diversity	Low: one product line.	High: multiple product lines (none >10%).	Low: one product line.	Low: dominant product line > 80% of sales.
International diversity	Low: one country, Spain.	High (>60% of sales) with Europe accounting for about 40% of total.	Low-one country, Spain.	High: non Spanish sales account for 60% of total.
Markets	Health care, automotive, public sector organizations.	Hospitals. Patients (doctors were key influence decision makers in prescription drugs).	Hospitality, registry offices, security.	Hospitality.
Competitive position	Niche market provider.	Global leader in Health Care.	Strong position in Spain within its niche market. Increasing competition in the last year from low-end products.	Dominant position in Spain, strong position throughout Europe.
Goals/ expected outcomes to be achieved through the relationship	Develop industry know-how through direct access to a large health care company. Growth.	Explore alternative and more cost-effective channels to reach doctors and induce prescription.	Commercialization of OCR-based solutions in Spanish hospitality. Grow the business in Spain.	Seek high margin complementary products to differentiate their locking solutions. Consolidate and extend distribution control.

Table 2 - Description of the two asymmetric alliances

	CASE 1	CASE 2		
	Startup1 (supplier)	BSM E-business unit	Startup2 (supplier)	TISA
Project starting date	March 2010	January 2009		
Covered period of the project	March 2010-December 2012	January 2009-December 2011		
Project goal	Build an Internet-based infrastructure that can be shared by all the different medical areas within BSM in order to support sales network's efforts and offer a single site to all doctors.	Commercialization of Startup2 products in Spanish hospitality.		
Resources contributed by the small suppliers and large customers	Internet and software technology know-how.	Medical knowledge. Pharmaceutical industry understanding. Doctors network.	OCR Technology know-how. Access to research consortiums.	Hospitality know-how. Relationships with hotels and major software developers. Access to distributors.
Initial contractual conditions	Quorum website standard design, user registration, sign-in/off. Define the guidelines for micro-site standardization. Coordination of all micro-sites. Website statistics and reports. Build the Wound Therapeutics micro-site.	2010 Budget including an average of: 120hours/month 50 euros/hour	Exclusive distribution in Spain of its products under TISA brand. Established prices and payment terms. Product improvement and technical support.	No commercialization of competitive products. Sales objectives: 325 units. Quarterly information of sales, prices, customers.

Table 3 - Projects in the two asymmetric alliances

CASE 1 Startup1-BSM 12 interviews			CASE 2 Startup2-TISA 13 interviews		
Position held in December 2012	Company	Prior years of service	Position held in December 2011	Company	Prior years of service
CEO and Founder*	Startup1	7	General Manager*	Startup2	2
Account Manager*	Startup1	5	President and Founder	Startup2	4
HR and Administration Manager	Startup1	6	Sales Manager*	Startup2	14 months
Sales Manager	Startup1	2	Support Manager*	Startup2	4
E-Business Manager	BSM	11	Division Manager*	TISA	10
Web Master	BSM	5	Sales Manager*	TISA	10
Product Manager Wound Therapeutics*	BSM	7	Support Manager*	TISA	3
Product Manager, Oncology Unit	BSM	6			
Strategy VP	BSM	10			

* This informant was interviewed twice

Table 4 - Informants interviewed in each case

DATA COLLECTION & CODIFICATION

In response to the call for studies examining the dynamics of collaboration in asymmetric supplier-customer alliances (Ariño et al., 2008), we analyzed a 2-case sample of alliances over a 2- to 3-year period—in both cases, half-way through the development process, when relational issues were still being resolved and knowledge creation was in full swing. In line with the literature, the first step was to develop an interview protocol making the distinction between *joint dependence* and *power imbalance* as different authors recommend (Casciaro & Piskorski, 2005; Gulati & Sytch, 2007) (see Appendix 4).

Interview data were collected, along with a large volume of trade press and archival data (business plans, proposals, contracts and emails) —and not restricted to documents shared between suppliers and customers; files from both partner companies, reflecting their own private analyses were used as well. Semi-structured interviews (face-to-face and by phone) were conducted with CEO's, e-commerce, sales and marketing

executives, IT and support managers at both case companies. A total of 25 interviews were conducted—13 in the failed case, 12 in the successful case. All questions were targeted according to role in the company. This wide range of data sources contributes to enhancing qualitative research outcomes (Eisenhardt & Graebner, 2007; Plé, 2013; Yin, 2003).

In preparation for analysis, we transcribed and coded data into categories according to observed recurrence; Appendix 1 provides the list of codes and operational descriptions. We refer to Startup1's Internet and software tech know-how using the code "proprietary knowledge", for instance. The following comment from one informant in Case 1 provides a good example of how codes (e.g. "strategic motivation") are grounded in interview data.

"They are a leading pharmaceutical company. We can learn how this industry works. They also work on large, complex projects that challenge our ability to develop tech-based solutions. They will serve as a good reference customer." (Case 1, informant)

DATA ANALYSIS

With a view to addressing the research question, we relied on the value creation and appropriation elements discussed in Sections 4 and 5 to best inform our analysis of case data (Yin, 2003) through categorization, recombination and display of the evidence (Miles & Huberman, 1994; Plé, 2013). First, an outline of events was drawn up to map the evolution of each alliance chronologically, along with two display tables—for the supplier and customer companies in each dyad—for each of the four key dimensions: *relative supplier-customer characteristics*, *learning with customers (cognitive learning)*, *learning with customers (behavioral learning)*, *customer-specific investments* and *dual value appropriation*. Informants' names are displayed in the rows in each table; the key observed codes/issues—e.g. *social interaction*, *emphasis on teamwork* and *joint decision making*—in the columns. Hence, each cell contains summaries of various individual comments on selected issues or direct informant quotes, where specifically indicated. In order to conduct cross-case analysis, we created 12 display tables for each case using the same uniform framework (24 tables in total). Appendices 2a and 2b provide the display tables for the *learning with customers (behavioral learning)* construct in Case 1 by way of example. The display tables were used to assist in a higher level of analysis supported by four summary tables explaining the link between dimensions (see Appendix 3, for instance).

Next, insights from the successful case were compared with those from the failed case to identify consistent patterns and themes. *Relative supplier-customer characteristics*, *learning with customers* and *customer-specific investments* were themes found in both Case 1 and Case 2, for instance, whereas *dual value appropriation* was only found in Case 1. A pattern-matching strategy (Yin, 2003) was then used to compare observations with the constructs, relationships and models from related studies. Analysis was assisted by MaxQDA2 software. Finally, the explanation-building technique for observed differences between symmetric and asymmetric alliances was applied (Miles & Huberman, 1994; Yin, 2003). In the Results section we will delve deeper into these four elements and present our analysis, supported by Table 5.

Jointly created value was the project goal. We analyze how complementary knowledge and skills may lead to new knowledge—which, in turn, drives the creation of valuable new solutions for the market (both

products and services); an Internet-based infrastructure common to all medical areas at BSM, for instance (Case 1). Appropriated value—depending on how it is used—is studied either as the benefits obtained by the supplier or by the customer (Vargo & Lusch, 2004). In this case, the value appropriated by the large customer includes increased brand loyalty among doctors; for the supplier, appropriated value translates as growth.

VALIDITY AND RELIABILITY

In order to guarantee the validity and reliability of our findings, we followed guidelines proposed by various authors (Gibbert et al., 2008; Miles & Huberman, 1994; Yin, 2003). Different sources of evidence were proactively searched as a means of triangulating information and developing converging lines of inquiry, with a view to increasing construct validity; the creation of a chain of evidence; and the revision of the case study report by key informants. Moreover, to improve construct reliability, a database was created where reports and documentary evidence were stored. Finally, a research protocol was established to guide data collection, coding and analysis.

RESULTS

Table 5 reports the elements of influence and consequences for value creation and appropriation observed in the two cases studied. Analysis of these elements contributes to extant research in three potential ways: (1) by identifying the sources of asymmetry resulting from differences in the characteristics between suppliers and customers, or *relative supplier-customer characteristics* (Element 1, Table 5); (2) by recognizing two conditions for success—*learning with large customers* and *customer-specific investments* (Elements 2 and 3, Table 5)—to overcome tensions and problems triggered by identified asymmetries; and (3) by pointing out positive results in terms of *value creation* and *dual value appropriation* (Element 4, Table 5) when the conditions for alliance success are implemented effectively. In subsequent subsections we will discuss these four elements in greater detail and show how they shape—facilitate or complicate—value creation and appropriation.

ELEMENTS OF INFLUENCE			CONSEQUENCES	
<p>1. Relative Supplier-Customer Characteristics</p> <ul style="list-style-type: none"> • Knowledge and expertise • Social relationships • Experience: products, markets, international. • Values. • Strategic motivation. • Long-term vision. • Goals • Commercial objectives • Size 	<p>2. Learning with large customers</p> <p>Cognitive learning</p> <ul style="list-style-type: none"> • Identifying large customer's knowledge. • Understanding large customer's expectations. • Understanding large customer's assessment. 	<p>3. Customer-specific investments</p> <ul style="list-style-type: none"> • Dedicated human resources. <p>Behavioral learning</p> <ul style="list-style-type: none"> • Social interaction • Open a window to supplier/customer. • Teamwork and joint decision-making. 	<p>4. Dual value appropriation*</p> <p>Value appropriated by the supplier</p> <ul style="list-style-type: none"> • Industry know-how • New product development • Growth. • Endorsement. • Access to customer's social network <p>Value appropriated by the large customer</p> <ul style="list-style-type: none"> • Increased brand loyalty. • Increased sales. • Explored cost-effective solutions. • Enhanced competitive position 	

* This element was only found in Case 1

Table 5 - Elements of influence and consequences for value creation and appropriation in asymmetric supplier-customer alliances

RELATIVE SUPPLIER-CUSTOMER CHARACTERISTICS

The first element, *relative supplier-customer characteristics* seems to be a source of tension—likely due to the fact that it underlies a number of resource and knowledge, expertise, social and experience asymmetries.

Startups and established customers approach alliances from very different business trajectories—and they bring different types of resources, expertise, social relationships and experience to the table. In Case 1, for instance, BSM provides a network of doctors and knowledge of the medical and pharmaceutical industries. Startup1 contributes Internet and software tech know-how (see Table 3). Similarly, in Case 2, TISA brings hospitality know-how, access to distributors and relationships with hotels and major software developers, while Startup2 brings the OCR tech know-how and access to research consortiums, hence the most recent advances.

Knowledge resource differentiation constitutes the basis for resource complementarity and shows the potential for creating new knowledge—e.g. building a broad Internet-based infrastructure serving all the different medical areas within BSM and supporting sales efforts while providing a single online platform for doctors (see Table 3). Resource differentiation makes alliances valuable for both startups and large customers by helping each of them efficiently fill resource gaps. Moreover, the larger customer stands to become more entrepreneurial, whilst the startup can hope to survive and grow.

As firms come from very different trajectories, other asymmetries exist both in terms of product and international experience and in terms of markets and competitive position, as Table 2 illustrates. Hence, a different set of commercial objectives are pursued and different long-term visions

and values spawn different expectations and motivations for forming an alliance (strategic goals and motivation)—which also represent sources of asymmetry. Finally, the relative supplier-customer characteristics element has an impact on learning processes, as we will discuss in the next section.

LEARNING WITH LARGE CUSTOMERS

Learning with large customers, the second element in Table 5, represents both a condition for alliance success and a way of responding to previously identified asymmetries. Data from our case study shed light on the importance of having interdependent goals to fostering learning—and the fundamental role strategic motivation and long-term vision play in the knowledge-building process. Our results also suggest that *shared values* towards collaboration facilitate *social interaction* and information exchange. Throughout our analysis of the cases, two distinct learning dimensions were observed: *cognitive learning* and *behavioral learning*. We will take a closer look at both dimensions in the next two subsections.

Cognitive learning

Case study evidence provides insights into the important role interdependent goals play in fostering learning. Although suppliers and customers had minimal knowledge overlap, both types of firms went through a selective process aimed at identifying what kinds of knowledge the other firm held—as well as where that knowledge resided. Startup2, for instance, was able to identify valuable knowledge in TISA sales and technical support departments (Case 2). The tech startup learned how attractive their OCR-based solution was for hotels—eliminating long queues at the front desk—from TISA's sales department, and how to integrate their solution with hotel software—essential to sales success in the hospitality sector—from the support department.

The following comments from BSM's e-business manager (Case 1) and the CEO at Startup1, respectively, suggest that both firms' goals were interdependent—pointing to a positive relationship between *goals* and *identifying large customer's knowledge*. Comments also suggest an indirect relationship between *identifying large customer's knowledge* and *open a window to supplier*. In all cases, a forward-looking outlook was crucial to overcoming the tensions and challenges that would arise down the road.

“We want all doctors using the BSM site to experience the same look and feel, irrespectively of their medical area. As Startup1 is a leading tech company trying to get established in the pharmaceutical industry we are willing to work with them and provide them with all the information they may need.” (e-Business Manager, BSM)

“BSM is a leading company in this industry and works on big projects where Internet-based technologies could have a significant impact. It is important to understand why these technologies are so important to them, in which areas they expect a higher impact and how these technologies can be applied in their context. [...] We are also ready to share information with them.” (CEO, Startup1)

Startup1 learned that BSM wanted to explore alternative, more cost-effective sales channels, both to reach out to doctors and to induce prescriptions. Although earlier product introductions were wide in scope—e.g. high blood pressure drugs addressed different kinds of pathologies—new drugs (e.g. hepatitis B medication) tend to target small market niches; and this seems to be very much the trend. In such a context, BSM was willing to work with small sales networks and direct marketing channels to complement efforts down the road. Hence, understanding the effectiveness of alternative channels such as Internet had become a strategic priority.

Startup1 developed a clear understanding both of the benefits to be expected and those which BSM hoped to reap (expected outcome)—but also of how the large customer firm preferred to work (expected process). This aspect is evident from the words of the Account Manager at Startup1.

“They did not want the typical buy/sell relationship. They were aware of the innovative nature of the project and wanted to work with us as members of our team. They wanted to learn with us.” (Account Manager, Startup1)

These two ideas, *expected outcome* and *expected process*, are captured by “understanding large customer’s expectations”. Similarly, understanding large customer assessment captures the idea of how each partner assesses collaboration in terms of outcomes and process. Startup1 is aware—given the difficulty of determining the relationship between the Quorum project and sales—of the complexity of assessing outcomes. Comments from the CEO at Startup1 corroborate this insight.

“We know BSM will not evaluate Quorum based on technical aspects. They will assess results based on how we work with product managers—and the degree of project acceptance in the different medical areas.” (CEO, Startup1)

Shared values regarding external collaboration—in terms of information sharing and cooperation—also play a key role. Comments regarding initial project design from BSM’s e-Business Manager (Case 1) shed light on the fundamental link between “values” and “understanding large customer’s expectations”.

“In the initial meetings with the CEO at BSM, he showed a very cooperative attitude. We discussed what the new project had to offer for our company. He understood the difficulties we faced and proposed a modular framework for a new website that could incorporate ideas from the medical areas—which, in turn, facilitated the acceptance of the project.” (e-business Manager, BSM)

If we turn to Case 2, the situation is very different in terms of shared values and learning, as comments from sales and support managers at Startup2 indicate.

“They believe in the old-way of doing business where collaboration means very little. They only care about their own objectives and show no concern for ours.”

“We don’t work together. I just provide technical support for hotels but cannot really work on significant improvements because TISA

is very protective with their information. It is hard for me to know more about hotel needs. I often come up with new ideas that we discuss internally for developing new products but I don't have the opportunity to meet with TISA and discuss them.” (Sales and support managers, Startup 2)

Startup2 developed an understanding of expected outcomes for TISA—much more short-term and sales-oriented in nature than for the startup. Moreover, Startup2 learned about TISA's expected process, that the large customer firm preferred to work on their own.

“They want to sell high-margin third-party products with exclusivity rights to compensate for decreasing margins in the competitive locking solutions market. As hotels keep their locking solutions for as long as ten years, these third parties provide good opportunities for TISA distributors to visit and sell to their established customer base.”

“TISA also enjoys having an innovative company image, through technology advances developed by companies like ours that, in turn, can make a difference in sales situations like big deals. All they're interested in is a straight buy/sell relationship.” (Startup 2)

Hence, Startup1 clearly understands that TISA views supplier firm technology as nice to have—but not essential to long-term strategy.

Behavioral learning

Case study data also suggest that *shared values* with regard to collaboration facilitate *social interaction* and the exchange of information. In other words, shared values *open a window to the supplier*—essential for learning at the cognitive level—as comments from the Accounts Manager at Startup1 reflect.

“They have always been very collaborative, we hold meetings at least once per month and at times we spoke to different people on the phone. We have always had the information we needed like the content shared with doctors (e.g., emails received by the different medical areas and training tools) to understand what was important in each area and what they expected from the project.” (Accounts Manager, Startup1)

In contrast, in Case 2, comments from the Sales Manager at Startup2 point towards TISA's lack of collaborative values and a reluctance to share information.

“They prefer to work on their own and don't want us to visit customers with them, probably because they always say that our products belong to them. In trade shows they don't let us be in their booth and don't even want us to speak to customers or other software developers.” (Sales Manager, Startup2)

We also observed that communication, the exchange of ideas and understanding customer expectations occurred more frequently between suppliers and customers when *goals* and *commercial objectives* were interdependent. This occurred in Case 1, where Startup1 reached its goal

of improving tech capabilities only through BSM meeting its goal of implementing innovative web-based technology in their website. Both firms developed an operational plan jointly, and held ongoing meetings to review the plan and introduce mutually agreed changes when needed. At the opposite end of the spectrum are comments from the CEO at Startup2 (Case 2)—a clear indication of conflicting goals:

“We need to grow our business in the hospitality market through more aggressive price tactics and more distributors; new low-end competitors are appearing and have started to capture market share. [...] Regardless of the market conditions, they sell our products very expensively because of their cost structure and require exclusivity rights on our products.” (CEO, Startup 2)

Hence, the process of working and deciding together (“emphasis on teamwork and joint decision making”) and social interaction and information exchange (“open a window to the other organization”) become increasingly difficult, as comments from the Support Manager at Startup2 illustrate:

“We don’t share a plan as we do with other customers. TISA has a plan but we have never seen it. The plan is the contract and they only read it in terms of their own benefits. For example they never provide us with the customer and developers list as the contract stipulates.”

“TISA basically contacts me when they need new product functionality or find problems they don’t know how to sort out at a hotel. In that case, they provide me with technical details or new desired specifications so that I can fix the problem.” (Support Manager Startup2)

TISA (Case 2) had no interest in understanding its supplier’s expectations, and the large customer firm’s zeal for value appropriation prevailed over its concern for value creation. In contrast, supplier-customer goals and commercial objectives in Case 1 were clearly non-overlapping and more conducive to learning. This demonstrated concern for the large customer’s needs, enhanced communication and increased the chances of novel ideas emerging. In the next section we will explain *customer-specific investments*, the third element in Table 5.

CUSTOMER-SPECIFIC INVESTMENTS

The third element—*customer-specific investments*—also represents a condition for success. Paradoxically, dissatisfaction with results and clear value expectations seemed to trigger this important element, which occurs when firms are capable of questioning initial project assumptions. The challenge for the startup firm is to gain an in-depth understanding both of large customer firm problems and organizational structure, and the industry at large, to create value and consolidate the alliance by moving it from an arm’s length to a closer relationship type.

In January 2011, dissatisfaction with results drove both Case 1 companies to question the way they worked and adopt a new approach. Due to an inability on the part of the large customer to fulfill their part of the deal, Startup1 had to dedicate more technical staff to redesigning the wound therapeutics area. In this case, we observed how the small supplier

unilaterally opted for customer-specific investments once it had learned enough about the large customer to understand the benefits of those investments. This point is illustrated by comments from the CEO at Startup1, suggesting a link between *identifying large customer's knowledge* and *dedicated human resources*.

"We need to prove that emerging technologies in multimedia are useful in a real customer environment with real data, needs and problems. BSM is interested in their own profit (they don't get any research or subsidy money) so these technologies can make a difference in their business somehow. We are not satisfied with the results and plan to try out a new approach using information from the wound therapeutics area." (CEO, Startup1)

Since this new approach was costly for Startup1, they needed to be reassured—through social interaction—regarding customer response, if such an investment were to be made. Comments from the Account Manager at Startup1 confirm that the required level of assurance existed:

"We worked well together. The problems were typical for innovative projects in the early stages. Access to information was not a problem." (Account Manager, Startup1)

If we take a closer look at Case 2, we observe that Startup2 becomes aware of their own vulnerability in a scenario where they have to invest more in their alliance with the large customer firm, TISA. As in the previous case, we observe the importance of trust-building in terms of equipping the small firm to face a higher level of dependency and risk; however, both supplier and customer fail to build this trust, as comments from the Sales Manager at Startup2 illustrate:

"The exclusive rights that we initially signed were accepted because we were in a very weak financial situation—but were not fair. This has fuelled big problems in our relationship because we see them as abusive. [...] The fact that they work on their own, that we don't have a common plan and that they don't facilitate easy access to information doesn't help either."

"Last year TISA sales were very low. They told us they were working on new deals but we believe there was some monkey business going on with the demo units, too. They were selling units that were intended for their internal technical department." (Sales Manager, Startup2)

Although firms invested in the required technical solutions and exchanged existing knowledge, we did not find evidence of new knowledge creation. This is due to the fact that neither firm engaged in in-depth learning about the other, as comments from the Support Manager at Startup2 highlight:

"Engineers at both companies worked for 6 months to integrate Startup2 software with the main software packages used in hotels (e.g., Opera). [...] As soon as the solution worked technically, the teams split up and never worked together again to make improvements or follow up on ideas coming from hotel customers." (Support Manager, Startup2)

Case study data show that customer-specific investments were seen as a clear indication of commitment—of the importance firms placed in the alliance. In the successful case, for instance, the dedicated Account Manager at Startup1 regularly visited BSM, having a positive impact on the generation of new ideas and contributing to new ways of doing things, as reflected by comments from BSM's e-Business Manager:

"The Account Manager visited us regularly and we often discussed the problems that different medical areas encounter when dealing with the project [...] and we came up with new ideas. We learned the real application for some of the new technologies together and found new applications for existing ones." (e.g., new tablet PCs for all delegates, with a view to increasing loyalty) (e-Business Manager, BSM)

Customer-specific investments also sent a positive message and contributed to creating knowledge and consolidating the alliance. As BSM was satisfied with the way the firms worked together—and acknowledged the commitment and efforts made by the supplier—the large customer was more willing to persevere and accept delays and setbacks in fulfilling the project goal. Hence, chances of obtaining better results increase as new approaches can be tried. As BSM's e-Business Manager expressed:

"In January 2011 results were very frustrating but we kept working with Startup1 because we trusted them and thought our work together deserved better results. New content and a new design were tried to make the website more valuable and attractive for the 60,000 doctors that integrate the wound therapeutic area. We gradually started to receive emails from doctors using the online services, particularly trainings and blogs. When we got close to 50% of doctors using the website, we knew how valuable the new online infrastructure was. Other medical areas in BSM started to find out about the success in the wound therapeutic area and required our services. The alliance becomes consolidated as our presence extends throughout most areas in the company." (e-Business Manager, BSM)

Unilateral investments of this sort have a dual positive effect: supporting knowledge development efforts and consolidating the alliance; yet they require a high level of trust—the missing ingredient in the failed case (Case 2).

The fourth and final element in Table 5—*dual value appropriation*—will be discussed in the next section.

DUAL VALUE APPROPRIATION

The data indicates that *dual value appropriation* is the result when the two conditions for success (identified earlier) are correctly implemented. Dual value appropriation was only observed in Case 1—where supplier and customer fully appropriate different, unique types of value from the alliance. The value captured by the well-established, larger customer does not diminish or encroach upon the value captured by the startup. In this sense, the value captured by BSM is twofold: on one hand, a common site where doctors can keep track of and recommend pharmaceutical products and, on the other, a better understanding of online sales channels (as seen in Table 5). The value captured by BSM

represents the input for the value captured by Startup1: on one hand, multimedia tech-based solutions for the pharmaceutical industry and, on the other, endorsement and growth.

This case provides a unique window on how both suppliers and customers may view current and potential benefits deriving from collaboration as independent outcomes, as a symbiotic relationship. The joint value created through alliance was successfully appropriated by the startup supplier firms in the form of non-transferable, idiosyncratic value that in no way diminished the value appropriated by the large customer. We have termed this phenomenon *dual value appropriation*.

In terms of power, the dominant view is that asymmetry and power imbalance seriously hinder effective collaboration. The large partner is often seen as having a power advantage, which it wields to appropriate the lion's share of the value. However, our data suggest that the amount of resources—often linked to the size of the companies, is not the only source of power. We can establish that the type of resources a startup owns, e.g. very innovative, hard-to-find multimedia software technology—together with the ability to apply these resources in shared projects—provides startups with more power and influence in their alliances with larger customers. Startup specialist knowledge (type of resources)—when essential to larger customer core business and long-term vision—has the potential to enhance its competitive position and be an important source of power for the small firm.

If we turn our attention now to Case 2, we observe a very different phenomenon. While in Case 1 the alliance is essential for both companies, here it is very important for Startup2 and merely “nice-to-have” for TISA. Comments from TISA's CEO and Division Manager, respectively, reflect this asymmetry:

“In 2009 our company was in a very difficult financial situation and TISA provided the necessary cash flow to, in the first place, keep operating—and to gain know-how of the hospitality market. At that time they represented over 90% of our sales.”

“We have margins pressure, since the locking solutions market has become a mature market where offering differentiating elements is essential. We are constantly looking for those elements—there are many alternatives. We prioritize those that give us higher margins and exclusive brand rights. [...] We also need to strengthen channel relationships by offering a portfolio of solutions which are useful for hotels—and OCR technology can reduce waiting times for customers during check-in.” (CEO and Division Manager, Y-TISA)

Moreover, Startup2 is far from being the only company selling OCR solutions and is not perceived as providing unique technology that can be considered essential to larger TISA's core business and long-term vision. According to TISA Sales Manager:

“There are different companies offering OCR solutions and our priorities are to maintain margins and sell under our own brand label. [...] More recently, new OCR products from Asian countries are sold at a much lower price, which is also putting pressure on Startup2”. (Sales Manager, TISA)

This alliance displays a high degree of power imbalance. Unlike in the previous case, in Case 2 we do not observe any signs of dual value appropriation. Whereas in Case 1 the larger customer firm takes advantage of the alliance to explore future potential, in Case 2 we observe an alliance where exploitation takes precedence over exploration: a buy/sell type relationship where no new knowledge is generated.

Based on the insights from these two polar case studies, we propose the following definition for *dual value appropriation*: *an inter-firm learning process where the main objective is to generate new knowledge that entails a different, unique value proposition and a different set of current and potential benefits for the alliance firms*. Dual value appropriation—the idea that firms do not split the value pie, as frequently proposed in the literature, but both fully appropriate it is one of the key contributions of our study. The realization that firms do not have to share jointly created value reduces competitive-cooperative tension; it also facilitates relational efforts, as small suppliers can expect full return on their investments. For startups, investing in key customers, this translates, quite simply, as investing in learning—hence, in their own future.

DISCUSSION AND RECOMMENDATIONS FOR BEST PRACTICE

In building upon the resource dependence theory, this study contributes to a better understanding of value creation and value appropriation in asymmetric alliances. In this section, we will present the main contributions to the literature on alliances, resource dependence, and value creation and value appropriation.

First we contribute to the alliance research by reviewing the concept of organizational complementarity and the logic of similarity (Goerzen & Beamish, 2005; Larson et al., 1998;) and shed light on how relative supplier-customer characteristics (Element 1 in Table 5) shift the dispositions of the actors for value creation in the context of alliances between small technology suppliers and large industry leaders.

We found that when the strategic motivation to form the alliance and goals (expected outcomes) are in line with the firms' long-term vision, as in Case 1 (explore low-cost sales channels for the large customer; develop industry know-how for the small supplier), the importance that firms assign to the alliance and their commitment to collaborate and dedicate resources increases, which in turn increases the chances to create more value and enhance their competitive position. Whereas in Case 2, the large customer is simply trying to increase its current sales level, there is no link to a longer view and as a result TISA's dedicated resources to the project were kept to a minimum technical level, which then limits value creation.

If we turn now our attention to knowledge and experience asymmetries, we observed how learning between startups and large customers occurred in spite of having minimal knowledge overlap, somewhat different from the relative absorptive capacity that emphasizes the need to share knowledge and informational bases (Cohen & Levinthal, 1990; Lane & Lubatkin, 1998). Moreover, we found that the fact that startups and large customers have minimal knowledge overlap and operate in very different markets contributes to firms being less protective and more willing to exchange information and share ideas since they do not see each other as competitors, which in turn leads to increased learning and value creation.

Similar to other studies (Lubatkin et al., 2001), we found that conflicting commercial objectives negatively contribute to social interaction

and the exchange of information and learning. Conflicting goals in Case 2 widened the rift between partners from the get-go. Very quickly, the alliance became a buy/sell type—based solely on commercial exchange, whereas shared values toward collaboration, as other studies sustain, contributed positively.

The significant differences in organizational processes, procedures and roles, and the fact that startups have restricted access to the attention of key decision makers in the large customer due to size difference, create specific social asymmetry that negatively affects communication, learning and value creation.

In summary, in asymmetric alliances, organizational fit though important cannot be explained by the logic of similarity. Different but complementary strategic motivations and long-term views supported by minimum knowledge overlap can result in value creation when firms share collaborative values and learn to overcome social and communication issues.

This leads us into the mechanisms or conditions for managing and overcoming the constraints implied by asymmetries in order to create and appropriate value (Elements 2 and 3 in Table 5-*Learning with large customers and Customer-specific investments*).

Given the extensive focus on power dynamics underlying dependence asymmetries, our second important contribution to the resource dependence literature lies upon our further development of the logic of embeddedness fundamental to joint dependence.

The logic of embeddedness emphasizes the importance of developing trusting alliances and relies on social norms of cooperation and reciprocity in order to reduce uncertainty in the flow of needed resources and enhance value creation. Similarly to other studies (Ariño & de la Torre, 1998; Casciaro & Piskorski, 2005; Doz, 1996), we have learned, that—as a safeguard mechanism—social interaction and information exchange at different levels are far more important than the formal contractual agreement itself. Sole reliance on a contract leads to minimal learning and in no way guarantees long-term success. Case 2 is a good example of how both firms repeatedly referred back to their initial contract—reading it only in terms of their own rights. In fact, reliance on the contract alone seems to have focused attention on the wrong set of issues altogether.

Interestingly, we additionally find that while the contract agreement itself appears to be relatively unimportant—distracting, even—the contractual process is a unique opportunity to assess collaboration opportunities based on the initial *relative supplier-customer characteristics* that stand to influence the learning process.

Gulati and Sytch (2007) highlight joint action, trust scope and quality of information as the mechanisms through which the logic of embeddedness operates at the level of joint dependence. However, they do not find support for the scope of information exchange and trust to be related to joint dependence.

Interestingly, we observed the central role played by *committed champions* in building trust and developing effective channels of communication. Committed champions are strategic allies that bridge both firms by facilitating learning at cognitive and behavioral levels. They facilitate organizational complementarity and fit and help overcome the difficulties implied by the asymmetries.

Startup1 in Case 1 initially found it challenging to overcome bureaucracy in BSM's larger, more formal corporate structure—and struggled to be heard at the upper management level where decisions were made. To overcome these challenges, the successful startup

identified a committed champion at the customer firm, a middle manager with whom there is a “meeting of minds”, or even a prior working relationship. She played a critical role in making the opportunity and value the innovative project created visible across its own company—and, specifically, to top managers. This highly respected e-business manager at BSM was key in facilitating social interaction and information exchange, overcoming resistance from the medical divisions. This resistance typically occurs in innovative projects as they imply significant organizational changes that alter power dynamics of key members. Committed champions are key in developing bilateral solutions to relational and operational problems. The situation was very different in Case 2, where Startup2 failed to find a committed champion figure at their large customer. As a result, limited learning took place.

Reflecting now on the specificities of asymmetric alliances, consistent with the literature (Dyer & Nobeoka, 2000; Gulati & Sych, 2007; Wagner et al., 2010), our study suggests that customer-specific investments are a necessary ingredient in new knowledge and value creation. An important issue is the role of customer-specific investments with respect to joint dependence and the logic of embeddedness. Our findings somewhat contradict the current assumption that alliance-specific investments are idiosyncratic—hence, pose higher risks for the investor firm, as they cannot be replicated elsewhere (Johnsen & Ford, 2008; Söllner, 1998).

In the case of our success story, early in the alliance both firms agreed on a project fee. The fee was calculated by the startup, mainly on the basis of an estimated number of work hours by a group of technicians and an account manager, at a set price per hour. As the pilot project progressed, however, myriad unforeseen problems arose—typically in very innovative projects. Some were due to the startup using emerging, close-to-the-lab technologies that had not been tested in real environments. In other instances, it was unclear who should be assuming the costs, and the customer lacked the skills to perform necessary tests. The startup was under pressure to try new approaches in an attempt to ensure project success and invested more resources in the alliance than initially planned (customer-specific investments).

One of the disadvantages in these asymmetric alliances is that small suppliers assume much of the burden of alliance-specific investments. We observe how the startup can play a much more proactive role than is often assumed in many studies (Holmlund & Köck, 1994; Prashantham & Birkinshaw, 2008), where the more dependent firm is often assumed to hold an inferior position and relegated to the role of minimizing value misappropriation (Cox, 1999; Lepak et al., 2007; Lindgreen et al., 2012). Driven by dissatisfaction with results—startups play a notably proactive, lead role throughout the unilateral investing and learning with customers, to the point that Startup1 ended up close to the break-even point of the project—even losing money at several points. According to resource dependence theory, so influenced by the logic of power, these unilateral investments, as they become more specific and cannot be replicated elsewhere, lead to a higher level of dependence for the startup and a power advantage for the large customer.

However, our study shows how the value captured by the small supplier in the form of better understanding of the pharmaceutical industry, access to the customer’s social networks and endorsement was believed to be to a large extent replicable in other pharmaceutical companies and, beyond, in other industries—hence, reducing dependency and moral hazard. Moreover, we did not observe any power coercive dynamics

employed by the large customer to appropriate more value. Small supplier investments sent a positive sign of commitment, which in turn triggered additional focus and dedicated resources from the large customer.

We believe that a more useful way of looking at customer-specific investments is to think about them in terms of cost-benefit analysis for each firm. Furthermore, in today's changing environments, getting small suppliers—which are more economically vulnerable than large customers under investigation here—to make such customer-specific investments may be increasingly difficult; as a result, large customers become increasingly dependent on small suppliers' specific investments.

In summary, the logic of embeddedness in asymmetric alliances pertains first, to the key role played by committed champions in building trust and joint action, and second, to the leading role played by the small supplier to overcome unforeseen problems, usually stemming from innovative projects requiring additional investments.

If we go deeper now into the specificities of asymmetric alliances, the third key contribution of this research—in this case to the literature on value creation and value appropriation—is the concept of *dual value appropriation* (Element 4 in Table 5). Dual value appropriation—the idea that both partners fully appropriate co-created value—challenges two notions frequently cited in the literature. The first one is the notion that partner firms split the value creation pie—*zero-sum game* (Mizik & Jacobson, 2003; Wagner et al., 2010). The second one refers to the distribution of value according to power dynamics. The predominant view in those studies is that since the alliance is more important and even sometimes a matter of survival for the small supplier, this firm is more dependent on the large customer who then will be in a position to get a bigger share of the pie at the expense of the small supplier (Katila et al., 2008).

Interestingly, Gulati and Sytch (2007), using data from the automotive industry, found different results and argue that a manufacturer's dependence advantage over its suppliers had no effect on the manufacturer's performance. They reason is that “while manufacturers may be getting the bigger share of the pie through coercion, the size of the pie can diminish at a faster rate, leaving them with a net loss” (p. 59). Thus, there is somewhat of a trade-off between value appropriation based on dependence and power advantage, and value generation based on joint dependence and relational embeddedness), as the feelings of anger and disappointment on the part of the suppliers can damage the value-generating potential of the alliance. But, even the fewer studies that single out the dimension of joint dependence (Casciaro & Piskorski, 2005; Gulati & Sytch, 2007) rely on the zero-sum game conceptualization of value.

Our study significantly differs from this idea, as the value captured by the technology company was different from that captured by the pharmaceutical company. The chance to explore new tech tools designed to channel costs keeps the firm abreast of shifting trends in drug production and provides the means for offering the same brand image to all doctors in their portfolio, regardless of their specialization—both firms appropriate all the value and use it in the long term. We have termed this phenomenon dual value appropriation.

In such a scenario, the potential benefits deriving from collaboration tend to be independent outcomes and both ideas, the zero-sum game and the idea that the large customer appropriates greater value at the expense of the small supplier, are less applicable.

In our successful case, firms are not driven by value-appropriating motives; the alliance rather represents a symbiotic type in the sense of Pfeffer and Nowak (1976), where both firms aim for superior joint value creation as a foundation for their own competitiveness. Symbiotic alliances involve one firm's using the by-products of the other, thus, using different resources. The results are that the benefits obtained can be used differently as they represent different value propositions for the supplier (e.g. increased brand loyalty) and for the customer (e.g. growth). Thus, small firms can expect full return on their investments, as the benefits obtained significantly differ from those obtained by their larger customers. Managers in small firms need to understand that selecting and investing in key customers means investing in their company's future, as new opportunities arise to apply what they learned in previous alliances. In this light, supplier- customer alliances can be seen as a way to better manage precious resources, as well as an ongoing learning and innovation tool. In this sense, participation in the alliance is—for both firms—an investment in their own future.

In summary, dual value appropriation brings joint dependence to the forefront, as asymmetric alliances can no longer be taken as bargaining tugs-of-war driven solely by value appropriation motives; rather they are symbiotic alliances where large customers and small suppliers aim for superior joint value creation as a foundation for their competitiveness. While previous relevant research (i.e. Gulati & Sytch, 2007) is based only on one side of the alliance, our research considers both sides. By using data from both the supplier and the customer, this paper has contributed several interesting insights to better understand the nature of asymmetries in vertical alliances: the mechanisms or conditions to manage or overcome constraints implied by asymmetries in order to better create and appropriate value and the specificities of asymmetric alliances (e.g. dual value appropriation), advantages and disadvantages.

CONCLUSIONS, LIMITATIONS AND FUTURE RESEARCH

This study of asymmetric supplier-customer alliances aimed to analyze how different tensions and dimensions within the alliance shape value creation and value appropriation. As we already highlighted at the beginning of the paper, this question is relevant as, for many startups, successful launch and growth hinge on the ability to build lasting alliances with key industry players.

We have analyzed two polar cases—one success story, one failure — which is a particularly important theoretical sampling approach for more clearly observing contrasting patterns in the data (Eisenhardt & Graebner, 2007). However, any generalization from this exploratory research needs to be made with caution because, as with most case study research, both managers and researchers should identify patterns of similarities between our cases and their realities.

In this study, interdisciplinary and inter-industry contexts brought together firms from very different trajectories, which offered representation of salient opportunities for innovation. In this context, the potential benefits derived from value-creating alliances tend to be independent outcomes and therefore may offer exceptional chances for *dual value* evaluations. However, in order to realize these benefits, firms need to invest resources and learn to work together. Importantly, this is not an easy task as firms often come from very different trajectories and contexts, which are then reflected in their different organizations, cultures and priorities.

One key element to consider is the alliance-specific investments which we found to be a condition for success and the price to pay for innovation. As resources are limited (particularly in the case of small companies), managers need to analyze the playing field before making any investment decision. This is important because, on many occasions, too many resources are being invested in the wrong companies. We also found that while the contract agreement itself appears to be relatively unimportant—distracting, even—the contractual process is a unique opportunity to assess collaboration opportunities based on the initial *relative supplier-customer characteristics* that stand out to influence the learning process. The contracting process allows managers not only to learn about the partner's expectations (expected outcomes), but also to assess how independent these expectations are when compared to those of their own firm. Another important consideration is to understand the partner's motivation to form the alliance by assessing whether there is a reasonable connection of both partners' long-term visions.

Finally, managing the social interactions addresses the complexities of finding the right balance between being purposive (achieving one's goals), on the one hand, and being flexible, on the other, by adjusting to the partner's needs. In asymmetric alliances, the role played by committed champions is key to building trust and foster joint action. Therefore, during the contracting process, managers should identify a highly respected top manager in small firms and middle managers in large corporations who can bridge the gap between the two organizations as a means to help when problems arise.

While most of the extant research has primarily discussed value-appropriation and power dynamics stemming from dependence asymmetries, our research additionally gives heightened attention to overall value creation driven by joint dependence. By analyzing the elements that influence value creation and value appropriation, we have identified: (i) the sources of asymmetry in vertical alliances, ii) two conditions of success to overcome the tensions and problems implied by asymmetries, and iii) a novel concept in the literature, which we have named *dual value appropriation*, when the conditions for success of the alliance are correctly implemented. As commented in Section 8 our results have some important implications for both the literature and the practice.

Despite the relevance and utility of the present study, our research does present several limitations. First, results are derived from case studies. Most of our data are qualitative, therefore, and data interpretation biases may arise. That said, we have followed all guidelines in the specialized literature (e.g. Miles & Huberman, 1994; Yin, 2003) to guarantee validity, reliability and objectivity. In addition, we have used several sources of information and all data has been triangulated. Case protocols were also established and a complete database created. Preliminary findings and reports were discussed with key informants from both firms in each relationship, with a view to ensuring that our conclusions reflected the reality a closely as possible.

Secondly, results are based on our analysis of the Spanish tech sector. As we have already commented, caution should be taken when extrapolating our conclusions to other contexts. This is, however, one of the classic limitations of case study research and one of the proposals we have made for future scholarly efforts. In our opinion, replicating this study in other industries and countries would enrich the body of literature on asymmetric alliances, as cultural dimensions may affect the dynamics of strategic alliance management.

APPENDIX 1. LIST OF CODES AND OPERATIONAL DESCRIPTIONS

CODE	DESCRIPTION
General knowledge base	Common knowledge and language suppliers and customers share to understand each other.
Proprietary knowledge	Specialized knowledge and distinctive information that the supplier/customer brings into the relationship.
Strategic/learning motivation	Main reason to establish the supplier-customer alliance. Importance of the relationship.
Goals	Expected outcomes to be achieved through the relationship.
Commercial objectives	Supplier/customer commercial objectives.
Long-term vision	What is the long-term vision of the supplier/customer and how does the relationship contribute to that vision.
Shared values	Positive attitude towards cooperation and exchange of information with external organizations.
Identifying key partner's knowledge	A firm's ability to identify the supplier/customer's key knowledge and where that knowledge is housed (who does what) and how this can be best linked to its own knowledge.
Understanding partner's expectations	Understanding the supplier/customer's goals and commercial objectives. Understanding how the supplier/customer prefers to work.
Understanding partner's assessment	Outcome assessment (assessment of the "hard" outcomes, the "what"). Process assessment (assessment of the relationship, the "how").
Social interaction	Extent to which people in both supplier/customer companies interact. It includes top management involvement and multiple interfaces (technical, commercial, strategic).
Open a window to the other organization	Extent to which formal and informal sharing of meaningful and timely information between the supplier and customer occurs.
Emphasis on teamwork and joint decision making	Extent to which suppliers and customers work in a cooperative manner (e.g., operative plans, joint decisions, etc.).
Open mindedness	Creativity and flexibility to adapt and respond to partner needs and values (e.g., proactive initiatives).
Incentives	Incentives to promote cooperation and information exchange between suppliers (startups) and the customers (large firms).
Committed champions	"Project leaders" who engage others in their organization, with a view to ensuring project success.
Dedicated resources	Time dedicated by people in the customer/supplier organization to meetings and project resolution. Difficult to replicate elsewhere.

Source: the authors

APPENDIX 2A. CASE 1-LEARNING WITH CUSTOMERS (BEHAVIORAL LEARNING)

Startup1 informants: 11 (CEO and founder); 12 Account Manager, 13 HR and Administration Manager, 14 Sales Manager

	Social interaction	Open a window to supplier	Teamwork and joint decision making
11	I think it has been a taking-giving relationship. We have failed occasionally but overall it has been a win--win situation. There are things that we have created here that could be difficult elsewhere. They gave us the OK without much thinking. It is not because of the 20 or 30K euros, it is a matter of trust. The only conflicts we have had have been with some technical partners of some medical areas that were not very professional but eventually they were sorted out. 1a's professionalism, her ability to influence the organization and her empathy with us; it is very difficult to find.	We have learned to work together and to share what we best know. We signed a c o n f i d e n t i a l agreement; we never had any problem in getting information, even confidential information.	Together we have learned the real application for some of the new technologies and found new applications for existing ones. We developed a content repository so that all the information was in one single place, accessible to everybody (press, the sales force, the intranet), but it was very difficult from the point of view of organization resistance. 1a worked on that and eventually it could be implemented. We both designed the project together to offer a single image of BSM with a common feel and look. We agreed in the beginning to have a lower level of control (the first year) on the micro-sites and gradually increased the standardization required. At the end of the first year we developed with 1a a marketing campaign for employees and we offered an mp3 device for those who registered on the Quorum site. We prepared large print outs to inform employees and placed them at the main BSM entrance.
12	We faced some problems if the project got delays or we made a mistake. However, because there was a good relationship and we were prepared to make things work, they were more flexible and forgiving with us than maybe with other suppliers.	I a l w a y s h a d clarification when needed.	We established phases for the project: design, mock-up, pilot and production and at the end of each phase, we shared results with the customer. We did that with each micro-site. We did not have a fixed and closed plan. We had clear priorities but then we worked also on a demand basis.
13		I have never had any problem in obtaining information.	
14		Microsite PM's were always very open	"We work hands together in this project"

Source: the authors

APPENDIX 2B. CASE 1-LEARNING WITH SUPPLIERS**(BEHAVIORAL LEARNING)**

BSM informants: 1a (E-Business Manager); 1b Web Master, 1c Product Manager Wound Therapeutics unit, 1d Product Manager Oncology Unit

	Social interaction	Open a window to supplier	Teamwork and joint decision making
1a	They are very responsive. The communication has always been very good, direct and clear. If I thought something could not work I told them straightaway. The key person for me 11. He had a strategic view of the project.	We have never had a problem in passing information on to them. We see them as partners and we also have had access to the information we needed (e.g proposals, new tools or new ideas to solve something).	"We both designed the initial project together. I have a lot of experience in the medical area and 11 is a great technologist. It has been a good marriage." We agreed in the beginning to allow the medical areas the freedom to choose the tech partners although they had to meet certain guidelines. At the end of 2009, we designed a campaign to create awareness about the importance of the project not only among doctors but among our employees as well. "I don't remember who named the project <i>Quorum</i> we worked together and this name just came up." At the beginning of 2009 I was pretty much alone and they were my people. With Startup1 we were doing things while we were learning. When we realized the importance of statistics, we started to work on them and saw the need to enhance visibility of the project among employees—we gave mp3 devices for free.
1b	12 helps us in solving the technical issues. He is responsive and always tries to help. He is my main contact.	We share a lot of technical information. They have always facilitated technical manuals as soon as I have asked for them.	I work regularly with 12. The last hardware we had to buy, we sat together, looked at the servers' specs and decided what was the best for us.
1c	They are very friendly people	We never have a problem in passing doctor's confidential information on to them. It was never an issue. They are our technical partners.	They always come up with the technical solution but we sit together and talk about how we want our area to be. We jointly explore the best alternatives.
1d	They have always been very helpful. They have recently organized training for us so that we could better work.	We never had a problem in sharing confidential information with them.	During a meeting, they came with a new idea about developing an oncology site for patients' relatives. We liked the idea and started to work on the content. It is now in place!.

Source: the authors

APPENDIX 3. SAMPLE SUMMARY TABLE CASE 1

STARTUP1 informants' comments in italic script
 BSM informants' comments in regular script

<p>RELATIVE SUPPLIER-CUSTOMER CHARACTERISTICS</p> <p>Shared Values</p> <p>In the initial meetings, STARTUP1's CEO showed a very cooperative attitude.</p> <p>Interdependent goals & commercial objectives</p> <p><i>Understanding from a leading customer what technical solutions best fit will allow us to develop and sell solutions in other pharma companies.</i></p> <p>We want to explore alternative low-cost sales channels.</p> <p>Long-term vision</p> <p>Low-cost channels will be important in the future because new drugs will target small niche markets (previous product introductions had a wider scope)</p>	<p>LEARNING WITH CUSTOMERS</p> <p>Cognitive Learning</p>			<p>DUAL VALUE APPROPRIATION</p>	
	<p>Identifying key customer knowledge</p>	<p>Understanding customer's expectations</p>	<p>Understanding customer's assessment</p>	<p>Value in use for the supplier</p>	<p>Value in use for the customer</p>
	<p>STARTUP1'S CEO understood we needed a flexible and modular technological framework and designed a project in such a way</p>	<p><i>They did not want the typical buying-selling relationships. They want to be part of the team</i></p>	<p><i>We know they cannot evaluate the Quorum project technically but it is clear how they want to work with us.</i></p>	<p><i>Prove that multimedia and internet-based technologies are useful in the pharma industry.</i></p> <p><i>Endorsement</i></p> <p><i>Growth (replication potential)</i></p>	<p>Increase brand loyalty</p> <p>Offer a common site to all doctors</p> <p>Induce prescription</p> <p>Test new low-cost channels</p>
		C	H		
	<p>EARNING WITH CUSTOMERS</p> <p>Behavioral Learning</p>			<p>CUSTOMER-SPECIFIC INVESTMENTS</p>	
	<p>Social interaction</p>	<p>Open a window to the other organization</p>	<p>Emphasis on teamwork and joint decision making</p>	F	F
<p>We spoke on a weekly basis with BSM E-Business manager and discuss the main issues. We also spoke with product managers in the different medical units.</p>	<p>As STARTUP1 is a leading Internet company we are willing to work with them and share the information they need</p> <p><i>Access to information was not a problem.</i></p>	<p>At the end of 2009, results were very frustrating but we kept working with them because we trusted them and thought that our work as a team deserved better results. We worked well together. Problems were typical of innovative projects at an early stage. Results will eventually come.</p>	<p><i>As results were very poor at the end of 2009, we had to dedicate more technical people to plan and try a new approach using information from the wound therapeutics area.</i></p>		

APPENDIX 4. INTERVIEW PROTOCOL—EXAMPLE QUESTIONS

INTRODUCTION

How did this alliance start? Is there a signed contract agreement? Did you know your partner company? Has your company experience in managing alliances?

For your company, what was the primary objective in forming this alliance? What other objectives did your company pursue? Has this changed over time?

How did you think the alliance could contribute to your firm strategy and long-term vision?

What was the alliance goal (project goal)?

Is your partner a competitor in any of your markets?

Describe the stages through which the alliance has evolved and the factors that shaped that evolution (timeline, events).

Do individuals in your company perceive cultural and/or structural compatibilities/ differences that help/prevent them from communicating and working effectively?

JOINT DEPENDENCE

Does your supplier have a technological advantage?

Would it be difficult to switch your supplier/customer?

Has your company made significant alliance-specific investments (e.g. dedicated people, equipment)? Provide examples. Explain.

What would be the implications if you withdrew from the project, from the collaboration with your partner?

In your view, how has the collaboration between the two companies worked?

Was it easy to access and communicate with your partner? Did your partner have an open attitude to your ideas?

Did your partner adjust to the changing circumstances of the project and to your needs and problems?

How did you establish priorities and make decisions?

Did any problems arise over time? How did you manage them? Were they treated as joint responsibilities?

Was there an atmosphere of trust between members of both organizations (e.g., proprietary information will be treated as strictly confidential; fair treatment; keep promises made)?

ASYMMETRY/POWER

How important was this project for your company (e.g., what % of your business does it represent (e.g., % of sales)?

How important was your supplier/customer? Did you have enough alternative firms to choose from?

Describe the resources and knowledge most central to this alliance that each of the partners contributed?

Knowledge (degree of knowledge overlap) this would also include expertise and partnering experience.

Degree of similarity in terms of collaborative values (positive attitude towards cooperation and exchange of information with external organizations)

Degree of similarity in terms of goals and long-term vision

Degree of similarity in terms of commercial objectives

VALUE CREATION/VALUE APPROPRIATION/OUTPUT

Has your company achieved its primary objective in forming this alliance? Do you think that your partner has achieved its objectives?

Has your company been successful at learning and creating new knowledge, (e.g., developed new product/service innovations) as a result of working with your partner?

Could you give an overall assessment of this alliance? Please explain

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