Enhancing Inter-firm Alignment in IT Vendor-Client Collaborations

An explanatory study within the Airline Service Industry

by

Davide Lovison

Student Number: 4522125

in partial fulfilment of the requirements for the degree of

Master of Science

in Management Of Technology

at the Delft University of Technology

To be defended in public on 08/22/2017

Graduation Committee

Chairperson	: Dr. R.M. Verburg	TU Delft, ETI
First Supervisor	: Dr.ir. G.A. de Reuver	TU Delft, ICT
Second Supervisor	: Dr. L. Rook	TU Delft, ETI
External Supervisor	: J. Hoetink,	AirFrance-KLM

Acknowledgments

This Thesis represents the final result of six months of challenging and stimulating work. Thanks to this project, I got the opportunity to immerge myself in the world of airline companies and explore the way innovation projects are managed in its complex IT environment. This research could not have been done without the help and support of the many people I had the opportunity to interact with during my last semester at Delft University of Technology.

First of all, many thanks go to my supervisor Mark de Reuver, for continuously challenging me to reflect on the content of my research and look for the right questions and answers. At the same time, I would like to express my gratitude to Robert Verburg and Laurens Rook, for the useful and critical comments that have been fundamental to enrich my final report with substance and quality.

Next, I would to thank Jan Hoetink, the person who gave me the unique opportunity to design and carry out the Master Thesis Project at AirFrance-KLM, and continuously offered his support by clarifying and reflecting with me on various aspects of the project.

Finally, I am very grateful to my family and all close friends, who never stopped in encouraging and supporting me with everything I needed at all times.

Davide Lovison

Executive summary

There has been a quick shift on the way organizations look at the IT value proposition. If in the past decades it was considered a cost-reduction driver, now CIOs view it as a new source of novelty and innovativeness - key factors to respond to changes in the economic, social, and technological environments. IT vendors are required not only to support various IT functions, but also to enhance business value through the internal development of cutting-edge applications and breakthrough services. In addition, CIOs are increasing the number of strategic collaborations as to take advantage of the vendors' innovation capabilities. This is in line with the Open Innovation paradigm, which has been successfully applied in many domains but whose benefits are still unreap in the IT field.

These trends rise several complications, due to the various challenges that innovation-oriented inter-firm collaborations imply from a managerial perspective. Specifically, it has been argued that inter-firm alignment is a fundamental element to successfully initiate IT innovation partnerships. However, little guidance is available concerning the management of the first phases of such collaborations.

To address this problem, this study explores the vendor-client relationship from three different but complementary perspectives (e.g., organizational, contractual and social), which have been identified as the main dimensions to be considered in the study of inter-firm collaborations and whose alignment between firm is necessary to build successful innovation partnerships. As such, this research proposes a conceptual model where the *organizational, social and contractual dimensions* represent the independent variables and where *inter-firm alignment* represents the dependent variable. Furthermore, our model incorporates two additional elements, namely *vendor size* and *relationship age*, which represent the moderator variables and influence the abovementioned relationship.

This qualitative study has been carried out in the working setting of AirFrance-KLM Group, a world leader in the airline service industry. Through the analysis on embedded case study consisting of three study cases, it has been possible to capture the three different facets of vendor-client collaborations and identify those elements and conditions critical to achieve inter-firm alignment during the formation of innovation partnerships with strategic IT vendors.

The findings of this research suggest that while all three dimensions need to be addressed during the initial phases of a strategic partnership oriented to innovation activities, the interrelations between social and contractual dimensions and between social and organizational dimensions required a more careful consideration. In regards to the intertwine between social and contractual dimensions, the results indicate that during the early stage of a joint innovation project in the IT environment, a governance based on relational and behavioural elements tends to complement, or either substitute, formal governance, due to a fluidity of goals, requirements and expectations. In regards to the linkages between organizational and social elements, the findings suggest that shared and well-defined organizational practises are critical to foster inter-firm social interactions and support the development of trust and commitment. Interpersonal exchange and mutual understanding are likely to increase when the governance of the collaboration is less centralized and formalized, as well as when more autonomy is given to its members and an integrative work structure exists.

Drawn from the analysis of the moderator variables, V*endor Size* turned out to have a great influence in achieving inter-firm alignment. Difference sizes represented an important element that had to be taken into account in aligning the various facets of the collaboration. A smaller vendor requires less effort in building a positive social context, as well as in achieving organizational coordination. On the other hand, it requires more resources to assess its real long-term value and contribution. A larger vendor is characterized by more layered and complex structures, and thus necessitates higher efforts to align processes and actions. However, it also provides a larger sets of skills and capabilities, as well as more industry knowledge and experienced people. In regards to the second moderator, R*elationship Age* greatly influenced the causal relationship: a longer relationship allowed to avoid complex contractual agreements. On the other hand, a lack of previous joint experience necessitated a higher initial efforts to build trust and assess each other commitment. Conversely, the findings suggest also that long-lasting business relations do not necessarily support initial inter-firm alignment in innovative vendor-client collaborations. Specifically, the study cases provide evidence that also the type of content exchange and the focus of previous business relations may also represent another moderating factor in achieving inter-firm alignment.

Furthermore, this Thesis provides a set of actions to be undertaken to achieve inter-firm alignment by covering the three different dimensions of vendor-client collaborations.

This research contributes to the existing scientific knowledge by providing a multi-dimensional perspective on the building process of IT collaborations within a context of innovation. This increases the current body of knowledge on IT relationship management, which has mainly studied inter-firm relationships from any single perspective and for non-innovation activities. The combination of multiple perspectives allowed to compare and study how different dimensions of inter-firm collaborations are intertwined and how this affects the quality of the partnership formation process. Additionally, we provided more clarity on other factors that potentially affect the formation of IT innovation partnerships (e.g., vendor size, relationship age) and we suggest that the focus and content (e.g., radical vs incremental innovation) of existing inter-firm activities is another factor that may affect the degree of inter-firm alignment in the initial phase of innovation partnerships. Furthermore, we contributed to the literature on Open Innovation by providing a deeper understanding on how to open up the IT function in order to leveraging external partners' capabilities for business benefits. We did this by adopting the perspective of both partners, rather than focusing solely on the client firm, which is characteristic typical of existing Open Innovation research. Lastly, we increased the knowledge on innovation and relationship management in the IT domain within the airline service industry, where empirical research remain scarce.

Follow-up research could support the generalizability of the findings by carry out similar studies in different industries. Moreover, as this research provides additional insights on the relation between relational and contractual governance, future studies can assess whether these two governance mechanisms can co-exist simultaneously (either as complementary or substitute) or are characterized by mutual sequentiality. Finally, the study of wider institutional factors and the use of a longitudinal approach could bring additional insight on the elements affecting the behaviours of partners when entering inter-firm collaborations and assess if and how the relationship's dimensions evolve over time.

Key words: IT Service Industry, IT Relationship Management, Innovation Partnerships, Open Innovation, Airline Service Industry, AirFrance-KLM

Table of Contents

1. Introduction

In the last decade the way in which the economic value is created has dramatically changed (Moller, et al., 2005). The ever-changing technological landscape, fierce competition, hyper market segmentation, and new digital information technology have highlighted the importance of knowledge creation and innovation (Carillo & Franza, 2006) (Moller, et al., 2005). This transition forces organizations to permanently embrace innovation, either in the form of products, services, structures or business models (Blomqvista, et al., 2005). Established large multinational firms are changing their strategic priorities to focus on their core capabilities and they are increasingly leveraging on external parties to master the different activities that characterize the innovation value chain (Moller, et al., 2005).

The latter concept has been defined in the literature as "Open Innovation" and advocates the opening up of the internal innovation process to external parties, as to search for new sources of knowledge and complement the internal capabilities of the organization. By adopting this new approach to innovation, firms have started to form wider and stronger partners' networks, through which they aim at achieving sustainable competitive advantages, crucial for their future existence (Chesbrough, 2003). It has already been proved that Open Innovation practices help firms to reduce failed product introductions and improve customer satisfaction in the manufacturing industry (Habicht, et al., 2012).

However, Chesbrough (2011), who first coined and promoted the term "Open Innovation", called for the adaptation and application of such concept also to the service industry, where its diverse, pervasive and intangible nature represents the main challenge for this paradigm. Accordingly, service organizations have now started to concentrate their efforts in exploiting the technological capabilities of their partners. Specifically, inter-firm collaborations in the IT domain have become one of the main drivers to prosper and sustain long-term innovation in today's competitive environments, due to the pervasive nature of IT technologies. In fact, IT services encompass different functions within and between organisations and have increasingly become the backbone of firms' core businesses (Leimeister, et al., 2008).

For these reasons, IT vendors are now seen as fundamental actors in the initiation and development of the innovation process, due also to their closer interaction with emerging and breakthrough technologies and the ability to revolutionize the client's organization through radical innovations (Azadegan & Dooley, 2010) (Lin, et al., 2013). As a consequence, vendor managers are required not only to guarantee the legal, risk, privacy and financial compliance, but also deliver value and innovation through the creation of stronger inter-firm collaborations (Simpson, et al., 2002) (Lin, et al., 2013). However, initiating strategic partnerships in the IT domain requires a new and different managerial approach from that required for traditional vendor management (Gartner, 2011). The strategic partner is now expected to deliver value directly to the business, rather than driving solely the IT function. New organizational measures and behavioural changes are necessary to enable IT and Business functions to act in new ways and facilitates inter-firm activities. Strategic collaborations can no longer be monitored through traditional SLAs and quantitative approaches defined in contractual agreements. On the contrary, a more subjective approach built on social interactions and social capital is necessary (Gartner, 2011). Therefore, the intertwine between the different managerial aspects of IT collaborations is becoming more and more relevant and, as such, it rises new complexities in the building process of IT innovation partnerships.

In view of this, this research aims at analysing the most critical dimensions that need to be taken into account to reach inter-firm alignment during the formation of IT vendor-client innovation partnerships, as well as how such dimensions are intertwined and influenced.

1.1 Problem area

IT innovation partnerships are moving to the top of the agenda of several large corporations and strategic vendor management is seen as an area where important investments in terms of time and resources are needed (Verweij & Peek, 2013). Ongoing inter-firm relationships have become an integral part of Business-to-Business (B2B) operating strategies and therefore require complex management structures. The governance of such relationships encompasses a vast set of issues (e.g., vendor selection, contract stipulation, partnership

building and development and personnel training), whose integration represents a key issue (Leimeister, et al., 2008). Moreover, relationship management in the IT domain is essentially different when compared to the other inter-organizational relations, due to its pervasive and strategic nature (Dibbern, et al., 2004).

Based on the several studies carried out in the field of IT project management and IT vendor relationship management, scholars agree on the existence of a general dissatisfaction among IT managers (Kakabadse & Kakabadse, 2002) (Weeks & Feeny, 2008) (Jones, 2012) (Urbach, 2014). The rhetoric of IT relationships and IT outsourcing has built on the assumption that the most strategic and capable partners will not only deliver high-quality services, but also value-added solutions in term of innovative content. Moreover, until few years ago, only a minority of major strategic IT decisions were triggered by the firm's desire to take advantage of vendors' capabilities to foster innovation (Weeks & Feeny, 2008). Interpretation of previous IT relationship management research shows that while innovation can be achieved through a close vendor-client collaboration and inter-firm alignment, it is subordinate to specific partners' characteristics and dependent on the type relationship between the parties involved (Chesbrough, 2011) (Weeks & Feeny, 2008).

Quite a large number of theories have been used to study and understand inter-firm relationships in the Information Systems (IS) domain. Current research span from management and governance to relationship type prescription and relationship evolution (Kern & Willcocks, 2001) (Leimeister, et al., 2008) (Elam, 1988). According to the work of Lee et Al. (2003) and Krcma (2007), relationships in the IS domain has been studied from three main perspectives, whose underlying theories can be categorized into three groups, namely organizational, contractual and social theories.

Within these dimensions, one potential cause of the high failure rate of IT partnerships has been identified in the lack of knowledge about the governance of client-vendor relationships (Leimeister, et al., 2008) (Mahnke, et al., 2006). It has been argued that vendor managers often underestimate the complexity of strategic collaborations and miss the experience of managing innovation-oriented projects. The involved parties frequently have divergent expectations towards the scope and motives of the relation, as well as a lack of understanding of the essential needs to successfully manage a long-term, innovation-oriented collaboration (Krcma, 2007) (Cohen & Young, 2006). In addition, even though the importance of strategic vendor management has been largely recognized among CIOs, too often organizations do not develop a structured and strategic approach to vendor management when it comes to innovation. On the contrary, firms tend to distribute responsibilities and activities across different organizational functions without a strategic and dedicated common framework. This often results in a misalignment of goals, mind-sets and skills within and between organizations, which hampers the creation of relationships that go beyond simply managing contractual agreements and extends into the areas of innovation and long-term value (Ackerman, 2011).

Understanding the management issues revolving around the building process of long-term vendor-client relationships in the IT service domain is therefore crucial to enable and ensure the achievement of such an undertaking (Kern & Willcocks, 2000) (Urbach, 2014). First, it is important because it allows to move vendor relationships from a tactical contribution to a strategic one. This way, vendor management and procurement would no longer represent support functions, but they would become central in the contribution of the firm's success. Second, effective inter-firm collaborations accelerate the implementation of the Open Innovation paradigm, which in turn has been proven to boost the innovation performance of companies. Third, a vendor-client relationship that moves from cost-reduction to value-creation allows to break down the barriers that often raise between the two parties and to shift the focus on delivering on customer needs.

1.2 Research gap

The previous sections highlight the importance of a new and dedicated management of vendor-client collaborations to fully exploit the Open Innovation paradigm. It has been argued that IT vendor-client relationships encompass three different dimensions, namely organizational, social and contractual. Several studies have been conducted in these areas and various scientific frameworks have been built. However, despite a large proportion of literature has studied the vendor-client collaborations within the IT service domain from the three different perspectives, an integrated view on the conditions necessary for the establishment of long-term partnerships is still missing (Rašković & Makovec, 2013) (Kern & Willcocks, 2000) (Krcma, 2007). Moreover, only recently researchers started to study the concept of innovation within the IT context, and their works are mostly related to the practise of IT offshoring. In parallel, the Open Innovation practises have been

mostly investigated in the manufacturing domain, where suppliers of physical products and are usually seen as the main source of knowledge and innovation. The dyad IT and Open Innovation only recently has gained the attention from the academics due to the increasing impact of the IT function on the overall profitability of the firm and its ability to keep path with customer demand of new products and services. Despite this, current research on innovation has little to offer when it comes to IT vendor-client collaborations, due to the narrow scope and the partial view obtained by past research (Blomqvista, et al., 2005).

Accordingly, several authors have argued that studying IT vendor-client relationships from any single perspective (e.g., organizational, social, contractual) does not allow to capture their complexity and determine their degree of interrelation (Kern & Willcocks, 2001). In fact, "*the prescriptive management studies revealed little insights into the general constructs of relations and potential underlying theory*" (Kern & Willcocks, 2000, p. 323). By approaching the topic with any single theoretical angle, the risk to leave out important elements increases due to their narrow focus. Moreover, bringing together different theories yields to various opportunities for synergies, as well as to an increase of the efficiency of the study in those areas where little research has been done.

Therefore, by applying a multi-theoretical perspective through the study of complementary aspects of innovation-focused partnerships, it is possible to depict a more valid and complete view of the reality under study. Specifically, past research suggest that the intertwined nature of the social, contractual and organizational dimensions is a critical element in the study of inter-firm relationships and is necessary to draw more meaningful and complete conclusions, as well as valid managerial implications (Blomqvista, et al., 2005).

Despite the advantages of a multiple-perspective research, the combination of different theories arise also several problems, due to the theoretical confusion that they may generate. According to Kern & Willcocks (2001), the first problem is represented by the level of compatibility between the different approaches, which may have boundary conditions and epistemic assumptions that make them non-reconcilable. The second issue concerns the fact that it is not always possible to define in advance the degree of appropriateness of the chosen theories for the case under research. Third, the use of multiple paradigms might leave out those controversies and critiques that are characteristics of each particular domain. For instance, the concept of efficiency from a resource-based perspective determines what to outsource and what to keep in-house. On the other hand, efficiency from a transaction cost perspective guides managers in choosing the governance mode within the relationship. Moreover, transaction cost theory sees relationships as costs, while the social view analyses them as value-generators. On the contrary, there is a strong similarity in the way organizational and relational theories look at power and conflict, which may lead to overlaps or ambiguity in their analysis.

In view of this, the current research aims at analysing how service companies can improve the level on inter-firm alignment by providing insight on the three dimensions of IT vendor-client collaborations (e.g., organizational, social, and contractual). Furthermore, it will analyse how these dimensions are interrelated and it will compare their explanatory power.

1.3 Practical problem

In order to govern vendor-client collaborations towards a more innovation-oriented and value-added contribution and fill the research gap identified in Section 1.2, this research will investigate the dynamics of the IT vendor collaborations within the airline IT service industry. The commissioner of this research project is AirFrance–KLM Group, which will offer the IT working setting and their knowledge as a basis and assessment tool for the research process. The choice of a multinational corporation where a vast set of processes, structures and roles are defined and well-structured allows to study and capture different facets of the dynamics of such relationships. Moreover, the availability of both successful and failed projects and the access to a wide range of IT and Business professionals enable a deeper understanding of the critical necessary conditions in long-term, innovation-oriented relationships. It is important to highlight that the research setting – the airline industry – is a rather special one, where innovation takes place mainly in forms of new services and in the backend processes. Therefore, a deeper analysis of such innovation context is needed in order to define the boundaries of the research.

1.3.1 Innovation in the airline service context

Among the different studies in the airline context, various definitions of innovation have been proposed and a common agreement is still missing (Rothkopf, 2009). The term "innovation" has often been used referring to the process of the transformation of an idea into new products or services introduced to the market, as well as to new organizational approaches and improved operational processes. Furthermore, it has been suggested that innovation "*is essential in order to generate long-term stability, growth, shareholder returns, and sustainable performance and remain at the leading edge of the organisation's industry* (Cottam, et al., 2001).

According to Hipp and Grupp (2005), innovation in the airline service context is restricted by nature and limited to incremental changes, due to the tendency of airline companies to imitate already existing services in other domains. However, in this research the term "innovation" encompasses the development and implementation of radical and breakthrough ideas and technologies, defined as "*products, processes or services with either unprecedented performance features or a familiar feature which offers significant improvements in performance or cost*" (Leifer, et al., 2001). Innovation in this context yields to changes and improvements of the current airline's offerings and necessitates an initial investment whose outcome cannot always be clearly forecasted in advance.

In the airline service industry, innovations can be analysed according to the classification proposed by Rothkopf (2009), who defined three main innovation categories: (i) those that impact the airline's operations and processes; (ii) those that yield to new products and services for passengers, either on the ground or in the air; and (iii) those that bring improvements in the way the firm operates in terms of business models and organizational structures.

This research will study the first category, which comprises innovations in the areas of technology, IT, and ground and flight operations (Rothkopf, 2009). These types of innovation are mostly process-focused and efficiency-driven, as to outperform the competition. Moreover, process innovations are considered more complex than product innovations and require substantial initial investments (Rothkopf, 2009). Usually, they are implemented in the backend of the firm's operations and are not directly perceived by the passenger. In this context, technology and IT are seen as main innovation drivers due to their great influence on business goals and their impact on various areas (Rothkopf, 2009) (Taneja, 2016). For instance, it has been suggested that areas such as revenue management and customer relationship management can become the key to achieving competitive advantages if addressed with the latest and cutting-edge solutions (Taneja, 2016).

After having defined the innovation context, the practical reasons behind this project are explained in the following section.

1.3.2 AirFrance–KLM

The commissioner of the project is AirFrance-KLM Group (AFKL), a new entity born in in 2004 from the merger between AirFrance and KLM. The resulting organization is a world leader in three different areas, namely passenger transportation, cargo transportation, and engineering and maintenance. Airfrance-KLM Group's vision is to become "*the most customer centric, innovative and efficient European network carrier*", by attracting new skills, pioneering new destinations, establishing new partnerships and exploiting market opportunities and breakthrough technologies (de Juniac, 2016).

1.3.2.1 Background

Low industry margin, fierce competition and ever changing technology landscape are bringing up and emphasizing the importance of innovation to achieve competitive sustainable advantage and long term success in the airline industry (Carillo & Franza, 2006) (Taneja, 2016). In particular, technological advancement has become one of the main drivers to improve performance and competitiveness (Leimeister, et al., 2008). The reinforcement of IT services and e-business activities in airline companies during the last years has resulted in higher sales volume and operational efficiency (Taneja, 2016). This has proved the critical role of IT for the corporate long term strategy and its ability to innovate. IT departments are now considered crucial drivers to support the exploitation of the market potential for innovation (Taneja, 2016). For these reasons, AFKL works on vendor strategies and aims at improving the collaborations with IT vendors. Additionally, the IT management has recognised the importance of involving new highly-innovative businesses as potential

strategic partners when it comes to emerging and breakthrough technologies. In this way, AFKL aims to improve its preparation to (un)anticipated technological trends and pave the way for being the most customer centric airline in the world and being a 'customer's of choice'.

1.3.2.2 Problem description

In the last few years IT of AFKL is transitioning the organization from an IT department to a more entrepreneurial, innovative and dynamic organization, where business & IT act as one. Among others, the implementation of the product organization and scaling agile methodologies, the creation of technology labs, and a close cooperation with the different business units allowed to speed up the innovation process and make it more efficient and effective.

Still senior management believes that AFKL lacks the innovation capabilities to carry out radical innovation projects. In particular, the innovation process of the organization suffers from three main problems: (i) it lags behind the competition, which results in high time-to-market for new products and services; (ii) it is financially inefficient, which reduces the number of opportunities and room for manoeuvre for innovation managers; and (iii) the innovation roadmap cannot always keep path with what customers want, which results from a lack of innovative content and shared vision.

To address these issues, AFKL is now investing time and resources for the creation of long-term, innovation-oriented partnerships with strategic vendors in an Open Innovation perspective. This way, the firm believes it will be able to have access to a wider set of ideas, capabilities and technologies, in order to boost the innovation performance, as it is happening among the competition. Generally, the (strategic) vendors are willing to collaborate and experiment with new ideas, and several projects have been started in this direction. However, it has been observed a sub-optimal productivity level in the value created by vendor relationships. After a first assessment of the vendor's openness and willingness to invest in innovation, it often happens that promising projects do not meet AFKL expectations or the collaboration ends prematurely. For these reasons, the senior management believes that the problem lies in the way these collaborations are established and managed.

In order to fully exploit the vendors' innovation potential, AFKL is now trying to determine the conditions that need to be put in place to successfully initiate long-term collaborations with strategic IT vendors. The IT management has started to critically consider which individual, party or function in the enterprise is the most appropriate to initially approach the IT partner, assess, choose and discuss contractual agreements, as well as how to manage a specific vendor throughout the collaboration. However, the organization is still struggling when it comes to engaging and building a long-term partnership with potential strategic vendors. Therefore, it aims at bringing more clarity on the constituents of the partnership formation process with the goal of enhancing inter-firm alignment to support long-term innovation.

1.4 Conceptual model

Based on the literature study and the identified practical problem, a conceptual model for this research has been developed (Figure 1). This model consists of four main building blocks, whose linkages are characterized by a cause-effect nature. In addition, a moderating block has been included in the model.

The first block consists of the independent variables of this study, namely *organizational, contractual and social conditions*. Such conditions have been determined through a thorough and multi-theoretical literature review on inter-firm collaborations. Specifically, three main theories have been considered and explored, namely Alliance Theory, Contractual Theory and Relational Marketing Theory. Instead of analysing vendor-client relationships from each perspective separately, a contingency approach seemed more appropriate in the case at hand (Grover, et al., 1998). By analysing the relationships from the three different perspectives and by choosing those elements that appear to be on balance, it has been possible to take advantage of their strengths and minimize their weaknesses (Grover, et al., 1998).

This research suggests that the three identified dimensions have an impact on *inter-firm alignment*, which represents the dependent variable. Inter-firm alignment refers to the degree to which the vendor and client firms have reached an alignment in strategic goals and contractual requirements (Rey-Marston, 2013) (Emden, et al., 2006), as well as in structures, tasks and processes (Anon., 2013) (Ferrer, et al., 2009), and have

established a constructive social context (Lazzarotti & Pellegrini, 2015) (Cong & Chau, 2010) (Sarkar, et al., 2001) (Rašković & Makovec, 2013) (Emden, et al., 2006).

This relation is moderated by two moderator variables, namely *vendor size* and *relationship age*. The first one relates to the overall number of employee of the vendor firm; the latter refers to the amount of time in which the collaborating partners have been formally working together at business level. The choice of incorporating these two moderators comes from the findings of past research on vendor-client collaboration. Specifically, the study of Khan (2014) examined the impact of vendor firm size and reputation on relationship governance, as well as how these factors influence client's perceptions of opportunism and uncertainty. Larson et Al. (2005) found evidence that vendor's attributes (e.g., vendor size) impact on client's perception of vendor competence, trustfulness and engagement. Furthermore, vendor firm size has been also identified as an important factor influencing the bargaining power in a vendor-client collaboration (Anderson, 1990). Other studies suggest that the relationship age has an impact on the management of the relation (Wathne & Heide, 2000). In particular, long-term collaborations seem to expose the client organization to a higher risk of opportunistic behaviours, as well as lock-in agreements (Wathne & Heide, 2000).

An increase of inter-firm alignment allows to increase the overall *quality of the collaboration*. By enhancing the quality of the collaboration, the firms' *overall performance* will improve.

This model has been developed in an Open Innovation context, where every single inter-firm collaboration represents the unit of analysis.
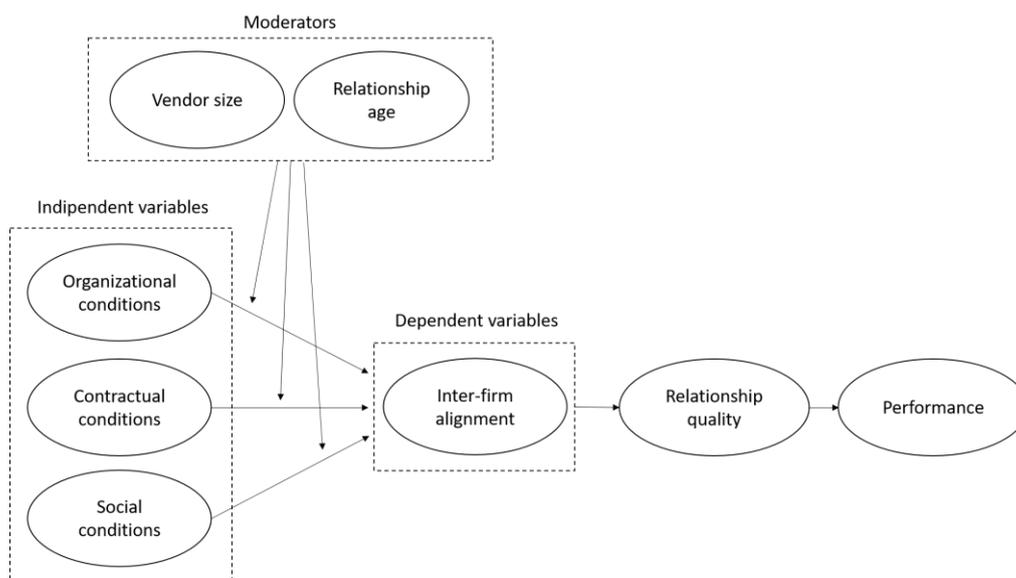
Figure 1. Conceptual Model

1.5 Research scope

IT vendor-client collaborations and Open Innovation encompass a large number of theories, stakeholders and practises. To carry out this research, four main boundaries have been set. First, the vendor-client relationship will be the unit of analysis. Second, within the context of Open Innovation, only the relationships with current and potential IT vendors will be analysed, leaving out other potential business partners such as universities, research institutes or the general public. Third, this research will analyse innovation projects in the areas of technology, IT, and ground and flight operations. Fourth, the vendor-client relationship will be studied under three different dimensions, namely organizational, social and contractual, as suggested by the literature review.

Moreover, within the proposed conceptual model the research will focus solely on the relation between the three dimensions of the vendor-client relationship and the degree of vendor-client alignment yielded by such conditions, as well as the effect of the moderating variables (Figure 2).
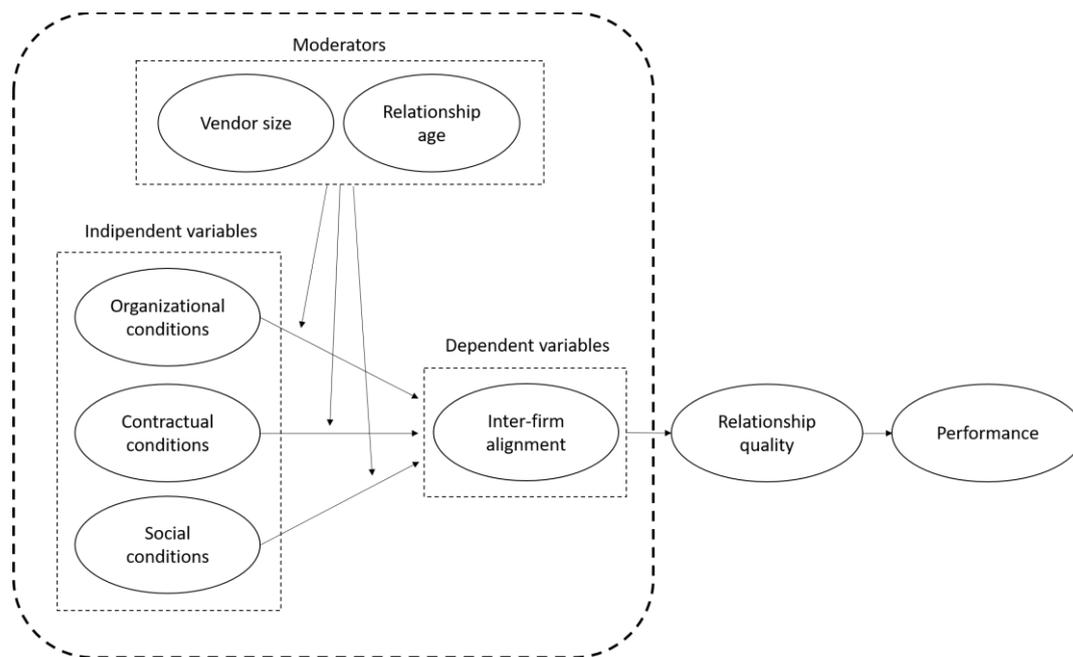
Figure 2. Conceptual Model – Research scope

1.6 Research objectives

The goal of this Thesis is to analyse how service companies can improve the level on inter-firm alignment during the formation of innovation partnerships with strategic IT vendors. In view of this, AFKL has been chosen as case study to address these objectives. The research provides an analysis of the current processes, practises and approaches adopted by AFKL to build long-term partnerships, a study of the barriers and impediments the firm is facing, and effective ways to tackle them. This work aims at adding value to service companies' ability to manage strategic vendor-client collaborations by aligning internal resources with external parties and by identifying the conditions that support successful long-term innovation.

1.7 Research questions

In order to address the abovementioned research objectives, the following research questions have been formulated (Figure 3):

How can service companies improve inter-firm alignment during the formation of innovation partnerships with strategic IT vendors?

1. How do the contractual, social and organizational dimensions influence the degree of inter-firm alignment during the formation of innovation partnerships with strategic IT vendors?
2. How and to which degree do contractual, social, and organizational dimensions interrelate to each other?
3. How do the vendor's size and the age of (pre)existing inter-firm relations moderate the effect between contractual, social and organizational dimensions and the level of inter-firm alignment?

1.8 Research approach

In order to address the research objective and answer the research questions, this study will begin with a literature review on IT relationship management and Open Innovation. Such investigation will allow to lay the foundation of the research by assessing the already existing scientific knowledge on the subject. The outcome of this phase will be a theoretical framework suggesting different elements characterizing vendor-client collaborations. As such, it will be used and assessed at later stages of the research process and represents the starting point of the second research phase, which consists of a qualitative embedded case study. The case study approach has been chose because it allows to obtain a comprehensive view of the phenomena under

7

study, capture human and environmental elements, and study a particular phenomenon through multiple lenses, in line with the multi-theoretical approach adopted. Specifically, three cases will be analysed in this research. Next, conclusions from a cross-case analysis will be drawn, along with case-specific explanations.

1.9 Research contribution

This research contributes by expanding the existing knowledge on the formation and management of IT vendor-client collaborations, thus addressing the increasing attention that inter-firm relationships in IT domain are obtaining for their growing strategic value. This study will shed light on the increased complexity inherent in these kind of collaborations, which can no longer be managed through legacy management approaches. In particular, it will analyse vendor-client relationships through three different lenses (contractual, social and organizational), whose complementary nature represents an important contribution of this research. This analysis will provide insights to IT and non-IT organizations on how to better structure the initial phases of inter-firm collaborations, by also suggesting a set of actions to undertake to ensure inter-firm alignment. Moreover, it will provide inputs to relevant discussions and future research.

1.10 Structure of the thesis

This thesis is structured in the following way. In Chapter 2, we will provide a review of the existing literature on IT relationship management and Open Innovation. Such literature review will cover three main management theories (e.g., Alliance Theory, Contractual Theory, and Relationship Marketing Theory), whose strengths and limitations will also be discussed. The outcome of this section will be a theoretical framework that incorporates several elements identified as critical in the formation of vendor-client collaborations. In Chapter 3, we will describe in details the research methodology, as well as the different research activities that have been carried out. In Chapter 4, an embedded case study will be carried out. This part represents the empirical investigation of the Thesis and consists of both case-specific and cross-case analysis. This section ends with a reflection on the Conceptual Model proposed in section 1.4 and with an assessment of the theoretical framework proposed in Section 2.4. In Chapter 5, we will discuss the overall findings of the research. In addition, we will discuss some of the limitations to in this research and we will provide a set of managerial recommendations and directions for future research.

2. Literature review

While in both fields of open innovation management and IT vendor management a high variety of research has been published, few authors have investigated the connections between them and an integrated view is still lacking. In addition, as stated in the previous section, scholars have called for the implementation of the Open Innovation paradigm in the service industry, where the IT domain has a pivotal position and relevance. The complex nature of the IT service industry, the increasing expectations towards vendor managers in bringing in new innovation capabilities, and the challenges that an open innovation approach poses in managing relationships suggest that further research is needed. In particular, a thorough study of the dynamics and enablers that characterize the formation of long-term, innovation-oriented collaborations in the IT domain is still missing.

2.1 IT Relationship Management

This research will address the area of IT relationship management with a focus on the factors that support the formation of inter-firm collaborations. Various authors have investigated the different facets of vendor-client relationships. Most of the current studies stream from the work of McFarlan and Nolan (1995), who advocated that the ever-changing IT technological landscape makes preferable for organizations to establish strategic relationships with their IT vendors, in accordance with the Open Innovation thinking. Scholars have constantly argued that IT vendor-client collaborations represent a management challenge, where social, contractual and organizational factors play a key role (Kern & Willcocks, 2000) (Kern, et al., 2004) (Liang, et al., 2015).

2.1.1 Three perspectives

Specifically, within the IS literature, vendor-client relationships have been studied from different theoretical perspectives. These theories have been grouped in three main categories: organizational management, economic, and social (Krcma, 2007) (Lee, et al., 2003). According to the first category, the IT vendor-client relationship is seen as a mean to have access to a new and different set of resources, as well as a way for firms to pool those resources in order to achieve mutually compatible objectives (i.e., alliance theory and resource-dependence theory). Economic theories look at the financial benefits and overall efficiencies that can be achieve through the establishment of new partnerships through contractual agreements (i.e., contractual theory and agency theory). Finally, social theories (i.e., social exchange theory, relational marketing theory) analyse the antecedents of long-term relationships and take into account mainly behavioural and social factors of the relationship, rather than the classic underlying parameters of economic exchanges.

2.1.2 Critiques

The three perspectives have also been subject to several critiques. The organizational perspective has been criticized due to the general focus on the nature of alliances (i.e., symmetry, formality and number) (Iyer, 2003). In contrast, today's long-term relationships can be viewed as firms' key resources that require a specific governance to leverage the full potential of greater intellectual depth, innovation, or value-added solutions; therefore, their study should move towards the structural characteristics of the relationships and to their partners, as to gain a deeper understanding of the manner in which a collaboration is structured and governed (Hunt & Davis, 2012) (Iyer, 2003). The main critique to the economic theories is that their analysis focuses only on fragmented economic transactions, missing out all other contingent relationships to this exchange. It has been argued that the focus should shift from a cost point of view to a wider transaction benefit-based analysis (Blomqvist, et al., 2002). A second critique has been raised by (Barney & Hesterly, 1999), who claimed that the economic perspective disregards the evolution of social factors such as trust and commitment, whilst it focuses only on the analysis of opportunistic behaviours. The last critique relates to the study of the type and nature of the transaction itself, which in point of fact influence and characterize the type of relationship governance (Lintukangas, 2007). Hence, economic theories themselves are not able to clarify the "*influences of internal management and social relations*" (Lintukangas, 2007) (Rašković & Makovec, 2013). Finally, social theories grew out from work in the field of marketing and psychology and only lately have been applied in the analysis of IT vendor-client relationships (Gottschalk, 2005). Previous studies have often been inconsistent as a result of the complex nature of interdependences that characterizes exchange relationships (Cong & Chau, 2010). Moreover, the main constraint of this perspective is that it merely focuses on the dynamics of the interactions between individuals and social groups (Kern & Willcocks, 2000).

2.2 The Theories

Within the identified macro categories, this research has adopted three specific theories to study vendor-client relationships, namely Alliance Theory, Contractual Theory, and Relationship Marketing Theory, as described in the following sections.

The first theoretical perspective (Alliance Theory) has been chosen due to its strong focus on the manner in which an inter-firm collaboration is structured and governed. It allows to analyse the structural characteristics of the relationship between the collaborating partners, rather than focusing only on its nature (e.g., formality, symmetry and number). The second theory (Contractual Theory) focuses on the formation and analysis of formal and written contracts, which create obligations and formally bound the involved parties. This theory has been selected since it provides a set of elements through which it is possible to analyse the design of formal agreements and determine the influence of contractual governance mechanisms on the outcome of the relationship. The last theory (Relationship Marketing Theory) allows us to investigate the social norms and behaviours that determine relational governance mechanisms, which are characteristics of inter-firm collaborations.

2.2.1 Alliance theory

Alliance Theory allows to analyse the governance, the structure, and the "ground rules" on which a collaboration is organized as to achieve mutually compatible goals (Iyer, 2003). This perspective investigates how collaborations can be built through the organization of their processes and structures, as well as modes of governance and balance of power. Adapting from Anderson and Narus (1990), Iyer (2003) has defined an alliance or collaboration as a "*working partnership in which there is a mutual recognition and understanding that the success of each firm depends in part on the other firm*". This definition implies that the collaborating organizations can benefits from each other's strengths by compensating individual weaknesses or by complementing or augmenting their combined competitive advantages. Specifically, this theory highlights the importance of clearly determining and understanding the "*rules*" upon which the partnership is governed, which Iyer (2003) has defined as "*partnership characteristics*". They include the mode in which a collaboration is structured and managed and represent the ground principles of a long-term relationship. Moreover, they can be depicted as a multidimensional phenomenon, due to the various facets that characterize the governance of inter-firm collaborations. Among these different attributes, participation at various levels of the organizational hierarchy, allocation of roles and responsibilities, teams' interactions, communication systems and information flow have been identified as key factors for an effective governance. Given that this research aims at developing the knowledge on how to best manage vendor-client relationships through the analysis of the strengths and weaknesses of organizational practises and governance structures, this theory contributes by focusing on organizational structures, joint practises, inter-firm mode of communication and project planning (Laegaard & Bindslev, 2006).

2.2.2 Contractual theory

Contractual theory analyses the design of formal agreements to stimulate cooperation and mutual benefits within a partnership between different parties (Hart & Holmstrom, 2016). It tries to explain the influence of contract obligations on the relationship quality, as well as on its strategic goals. Through this perspective it is possible to understand the characteristics of contractual relations and contractual dimensions (Kern & Willcocks, 2001). Generally, this theory has considered the contract as "*a legally bound, institutional framework in which each party's rights, duties, and responsibilities are codified and the goals, policies, and strategies underlying the arrangement are specified*" (Gottschalk, 2005). According to this view, a comprehensive contract diminishes opportunistic behaviours, hazards, and is a mean to safeguard IP's issues. Moreover, it reduces uncertainty and ex-post performance problems. On the contrary, a partial contract is seen as a way to open up space for shirking responsibility, increase the probability of conflicts and create confusion in shared procedures and resources (Luo, 2002).

Despite the strong focus of past literature on the importance of formal contracts, today's contracts are studied through the analysis of the interplay between relational and contractual governance, the so-called "complementary view" (Leimeister, et al., 2008). Such view has recognised that it is not possible to write down all the intricacies of today's technological and organizational environments and that formal, legal contracts

alone are not sufficient to leverage the full potential of innovation and valued-added solutions (Leimeister, et al., 2008). De Jong et. Al (2003) suggest that "*very simple contracts seem to be able to regulate very complex collaborations*" and empirical studies on contract clauses in innovation networks have shown that there is a tendency to concentrate on few core topics, rather than describing in details the future activities (Grandori, 2006).

2.2.3 Relationship Marketing Theory

In order to understand Relationship marketing it is important to distinguish between long-term relationships and short-term transactions (Morgan & Hunt, 1994). The first one are characterized by a long-term horizon, which has been established thorough an ongoing process. The latter one are events in time with short duration and usually cost-driven (Dwyer, et al., 1986). In the case of this research, long-term collaborations will be the unit of analysis. Here, the role of relationship marketing has been defined as "*attracting, maintaining, and – in multi-service organization – enhancing inter-firm relationships*" (Berry & Leonard, 1983). Moreover, "*it is oriented toward strong, lasting relationships with individual account*" (Bund, 1985). Other authors view it as a *philosophy* to steer the supplier-buyer relationship toward a strategic contribution (Veloutsu, et al., 2002). In this perspective, the true value is created through prepositive behaviours and high commitment in integrating separate processes, mind-sets and cultures, rather than with a series of discrete transactions (Matevz & Maja, 2013). Relationship Marketing investigates those conditions that determine the social environment between groups and individual (Payne, 2000). Furthermore, it studies the behaviours and norms that generally complement contractual relations (Cong & Chau, 2010). Through the study of these factors it is also possible to determine their impact on the relationship quality. Previous research in this field has analysed the different dimensions of relationship quality (Kern & Willcocks, 2000), the underlying interpersonal determinants (Goles, 2001), the impact of trust and commitment (Grover, et al., 1998), and the factors that determine the life-span of inter-firm relationships (Goo, et al., 2009). In this research, Relationship Marketing Theory will support the identification of the social factors most critical in vendor-client relationships and will be an instrument to analyse the impact of relational governance mechanisms on the formation of such collaborations.

2.3 Open Innovation

The general assumption of the Open Innovation is the opening up of the innovation process (Huizingh, 2011). In this regard, scholars and practitioners have defined Open Innovation as "*the use of purposive inflows and outflows of knowledge to accelerate internal innovation, and to expand the markets for external use of innovation, respectively*" (Chesbrough, 2006). Among the different benefits of the Open Innovation approach, organizations adopt such practise in order to (i) reduce the time-to-market for new product and services (Chesbrough, 2011) (ii) cut down the cost for innovation and R&D (Virlée, et al., 2015) (Chesbrough, 2006) and (iii) capture higher benefits from the internal research process by utilizing an external path to market and external skills and capabilities (Huizingh, 2011). Different large firms such as IBM, P&G and Philips have successfully implemented the Open Innovation paradigm and represent today's world leaders when it comes to the management of the innovation process (Enkel, et al., 2009). Their success suggests that this new mode to address innovation is an important driver to achieve competitive sustainable advantages and ensure long-term success.

Due to the importance of this new practice, during the last decade scholars have studied the topic of Open Innovation from different perspectives and several contributions have been provided. Among the topics studied in previous research, academics have explored: different modes of collaboration among innovation partners (Bigliardi, et al., 2012), the impact of the Open Innovation paradigm on firms' performance (Berchicci, 2013), the influence of dynamics capabilities and absorptive capacity on the implementation of Open Innovation practices (Newey, 2010), the role of IP (Grönlund, et al., 2010), the implementation of Open Innovation in practice (Burcharth, et al., 2014), the importance of knowledge management in the Open Innovation approach (Cheng & Shiu, 2015), the influence of networking on innovation performance (Mazzola, et al., 2014), and the adoption of the Open Innovation paradigm in various domains and industries (Bianchi, et al., 2010) (Kim & Park, 2010) (Laursen & Salter, 2006), among others. This extensive body of knowledge suggests that the understanding of this topic can result in decisive improvements in the overall firms' innovation performance. Despite the recent increase of the Open Innovation literature, Open Innovation in the service industry has been only partially explored and scholars have called for further research in this domain (Evangelista & Savona, 2010) (Trigo & Vence, 2012). Such increasing relevance comes from the assumption that the service industry

is intrinsically different from the manufacturing one, and a diverse approach is required for the implementation of the Open Innovation paradigm (Vanhaverbeke, et al., 2014). Three main reasons have been indicated as crucial differences between the two domains. First, the intangible nature of services arises communication problems and demands a closer cooperation between the different stakeholders (Chesbrough & Davies, 2010). Second, the intangibility of services requires firms to adopt new mechanisms to ensure confidentiality agreements and coordination among the involved parties (Rubalcaba, et al., 2010) (Virlée, et al., 2015). Third, the concurrence production and consumption of services has been proved to influence the implementation of the Open Innovation practices (Chesbrough & Davies, 2010).

2.3.1 Open Innovation in the IT service industry

Due to critical role of IT in different sectors, innovation in this domain requires a large set of skills and capabilities. In the last decades, these new competences are increasingly internalized by firms through the establishment of collaborations with external partners, which represent a new source of knowledge and technologies (Asikainen & Mangiarotti, 2016). These activities are exemplary practises of the Open Innovation paradigm, which has now gained relevance also in the IT service domain (Virlée, et al., 2015) Moreover, the degree of openness of the innovation activities has been proved to positively influence the firms' innovation performance in the IT service industry (de Jong, et al., 2003). In this regard, scholars have identified three main features that are typical in the Open Innovation paradigm and are characteristics of the IT service industry as well. First, the innovation process in the IT domain requires to combine current knowledge with new technologies. Second, the IT service industry is characterized by a close cooperation among several stakeholders from other fields, due to its pervasive and complementary nature. Third, fast technological advancements foster the inter-firm competition, which firms address by looking at new sources of knowledge and innovation (Asikainen & Mangiarotti, 2016). Such similarities suggest that implementing an Open Innovation approach can yield to an increase in the firms' innovation performance also in the IT service industry.

Previous studies in the IT service domain have focused on topics such as knowledge management (van de Vrande, et al., 2006), collaboration modes (Trigo & Vence, 2012), coopetition (Mention, 2011), partner networks (Salavisa, et al., 2012), and IP rights (van de Vrande, et al., 2006), among others. Despite previous literature gives some recommendations for the implementation of Open Innovation practises, empirical and theoretical knowledge remains scarce and further studies are required (Asikainen & Mangiarotti, 2016) (Virlée, et al., 2015). In particular, various authors have claimed that among the different areas covered by the IS literature, few efforts have been made in understanding how to successfully open up the IT function in order to leveraging external partners' capabilities for business benefits (Yoo, et al., 2010) (Lacity, et al., 2010) (Lacity, et al., 2011) (Aubert, et al., 2014).

2.3.2 Open Innovation in IT vendor-client relationships

A stream of literature advocates that IT suppliers can be seen as a source of innovation, where multiple interactions between business partners represent its main driver (Aubert, et al., 2014). This might seem at odds with the low flexibility that generally characterizes IT vendor-client agreements and their strong focus on efficiency. In contrast, it has been argued that interactions with IT vendors enable organizations to have access to multiple sources of value, knowledge and people (Costa, et al., 2011). This leads organizations to open up their boundaries and rethink their innovation strategies (Aubert, et al., 2014). However, the management of IT vendors requires strong in-house capabilities and great leadership skills, factors that do not come at low costs (Willcocks, et al., 2006) (Aubert, et al., 2014). Lacity et al. (2010) indicate that the scarcity of studies in this area is due to a different focus of IT researchers, rather than to an absence of linkages between innovation and IT vendor relations. Specifically, academics have mainly explored the relationships between the role of IT offshoring and the level of firms' innovativeness. Musteen and Ashan (2013) found that the practise of IT offshoring enhances the innovativeness of the client's firm due to lower risks and costs associated with innovation and the accessibility to a wider and diverse set of skills and resources. Mihalache et al. (2012) studied the relationship between the central function of offshoring and the client's innovation performance, which resulted in an inverted U-shape curve. Musteen and Ashan (2013) have shown that location-specific skills enable organizations to increase their innovativeness. However, offshoring beyond a certain threshold has been proven to hamper innovation performance in the long-run (Mihalache, et al., 2012). The scarcity of

studies on how to improve the formation and management of vendor-client collaborations suggests that a more integrative view on the partnership building process is necessary.

2.4 Theoretical Framework

This section elaborates on the current body of literature and, based on that, it proposes a provisional theoretical framework. As such, it sets the foundation for the analysis of the different facets of vendor-client relationships, which will be assessed in an empirical context.

Drawn from the theories previously illustrated and from the Open Innovation paradigm, the three perspectives of IT Relationship Management try to capture the most important elements that characterise the building process of innovation partnerships with strategic IT vendors. Specifically, over 30 scientific articles on IT relationship management and IT and Innovation in outsourcing have been selected and reviewed. By analysing their findings and evaluating their relevance for this study, we categorized the elements drawn from 21 of them. We did this by selecting those factors most significant for each dimension, while trying to balance out their number among the three dimensions. As such, based on this framework, we could develop a survey protocol that addresses each dimension in an equally distributed manner.

The results of the review process are summarized in Table 1. Each perspective has been divided in three additional dimensions that point out key aspects in the management of such relationships. The factors of the Organizational dimension relate from the body of literature on Alliance Theory; the elements of the Social dimension are associated with Relationship Marketing Theory; and the ones of the Contractual dimensions mainly pertain Contractual Theory. Furthermore, every single dimensions has been built on three different sub-items. To sum up, a total of 9 primary items and 27 secondary items have been defined.

2.4.1 Organizational Perspective

According to the information collected in the domain of Alliance Theory, the organizational conditions have been categorized in three main groups: Interactions, Planning, and Structures.

Interactions

Interactions comprehend the modes and channels of the interplay between individuals and organizations that engage in the exchange's formation and execution. In the case of this research, the following elements have been considered:

- Communication – *"The proactive formal and informal sharing or exchange of meaningful and timely information between firms"* (Hirschheim, et al., 2002). Such definition highlights the importance of the efficacy of the communication process, as well as its bi-directional nature. Moreover, communication is not limited only to day-to-day operational information exchange, but to future strategic purposes as well. Finally, the information can be exchanged through both formal and informal channels, both of which have been proved to be essential to increase the quality of the relationship.
- Coordination – *"The active management of dependencies between activities to perform agree-upon tasks"* (Malone & Crowston, 1994) (Hirschheim, et al., 2002). Previous research suggests that good coordination requires mutual commitment and strategic alignment between the involved entities, especially in environments with high degree of complexity such as is the case of IT.
- Cooperation – *"The undertaking of interdependent and complementary activities to achieve mutual benefits"* (Kern & Willcocks, 2001). Cooperation is a similar concept to coordination and has been identified as an important driver for reducing uncertainty and accomplish organizational goals. Moreover, this definition highlights the fact that each party in the relationship has its own goal, which not always are compatible. As a consequence, through cooperation the involved parties tries to find a balance between their degree of autonomy and the achievement of the established goals.

Planning

Planning represents the set of organizational measures and practises employed for the management and execution of future collaborative and uncertain actions. This concept consists of the following sub-items:

- Flexibility – "The e*fficient response to day-to-day (operational) changes, occasional changes, and substantive, long-term and rare (strategic) changes (where efficient means a minimal impact/degradation on performance)*" (Matevz & Maja, 2013). The propensity to adapt when circumstances change is an important characteristic since it forms the basis for a sustained relationship (Doz & Hamel, 1998). It may take place as a change in the share of specific tasks, as well as on the structural requirements and organizational practises within the relationship (Emden, et al., 2006).
- Joint action – "*The degree of interpenetration of organizational boundaries*" (Heide & John, 1990). This definition implies that interfirm collaboration requires the opening up of the organizational boundaries as to define long-term and joint planning, as well as shared goals and practices. Through joint activities the collaborating parties can decrease the relationship rigidity and create ground for negotiation (Lee & Kim, 1999).
- Project management skills – A set of "soft" and "hard" skills for a correct project implementation (Coates & Bals, 2013). These skills comprise the ability to continuously learn by listening and communicating, the exercise of leadership and conflict management, and a deep knowledge of project management processes and tools. High degree of project management skills has been proved to increase the likelihood of project success (Coates & Bals, 2013).

Structures

Structures entail the type of framework and configuration used to build and management the relationship, as well as the consequent structural properties. The following sub-items have been considered in this research:

- Power – "*The degree of control and influence a stakeholder has over a client organization's IT strategy, and outsourcing destiny*" (Kern & Willcocks, 2000). This notion indicates the ability to impose one's intentions over the collaborating party, based on factors such as company's size, mutual dependence, resource control, as well as contractual completeness.
- Senior management support & buy-in – The degree of top executives' support in the execution and management of the collaboration, as well as their ability to overcome the inevitable divergence of interests between participants (Lee & Kim, 1999). Top management support has been proven a critical factor for the improvement of partnership quality, as well as to maintain a high level of interest and awareness throughout the organization in building the relationship (Kern & Willcocks, 2001).
- Roles and responsibilities – The diversity of expertise, experience, knowledge, skills and authority of the team building and managing the relationship (Blumenberg, et al., 2008) (Kern & Willcocks, 2001). This definition indicates the importance of teams with blend of diverse skills & experience, as well as a common and positive attitude towards collaboration projects.

2.4.2 Contractual Perspective

According to the sources analysed from the Contractual theory, the organizational conditions have been categorized in three main groups: Company Objectives, Incentives, and Contract Completeness.

Company Objectives

Company objectives refer to the set of goals, agreements, and congruencies that are targeted and formalized by the two parties within the collaboration. The following sub-items have been considered in this research:

- Common vision & goals – "*The degree to which partners share goals that could only be accomplished through joint action and the maintenance of the relationship*" (Gupta & Sahu, 2012). This definition does not necessarily implies that the involved parties require to have exactly the same goals. On the contrary, it has been argued that, for instance, even different goals can be achieved through a common business model (Emden, et al., 2006).
- Promises – "*The assurance or obligation to perform the expected and required exchanges in the relationship*" (Kern & Willcocks, 2000). Through promises the parties establish mutual obligations and the content of the exchange. However, the contract suffers from various problems, such as excessive reliance, high rigidity, ambiguity, and future gaps.
- Long-term orientation – "*The willingness to make short-term sacrifices for long-term results*" (Aloini & Dulmin, 2015). The time horizon of the agreement has been identified as an important factor to

achieve both present and future goals within a relationship. Long-term orientation drivers high commitment, which, in turn, increases the likelihood of mutual gains (Emden, et al., 2006).

Incentives

Incentives are inducements and rewards used as a motivational driver to achieve a desired outcome. They can have both a financial and non-financial nature. In the case of this research, the following elements have been considered:

- Mutual gain/risk – *"The extent to which parties share risks and rewards"* (Kern & Willcocks, 2000). Gain and risk sharing is a contractual structure where the involved parties agree on sharing the gains and the costs that will eventually result from activities characterized by high uncertainty, such as is the case of innovation. Such agreements usually require high degree of trust and mutual respect. However, gain and risk sharing adds challenges such as bureaucracy, lack of ethics and budget issues (Cortese, 2015).
- IP management – *"The existence of licensing or confidentiality/non-disclosure agreements or other intellectual property protection mechanisms"* (Aloini & Dulmin, 2015). In innovation-oriented projects this aspect results particularly important in the early phase of the collaboration, as to decrease the chances of opportunistic behaviours.
- Pricing model – *"The process of determining what a service provider will receive from a client in exchange for its services"* (Al-Roomi, et al., 2013) Since innovation projects are often out of the scope of the relationship from the perspective of the vendors, it is important to define a proper pricing model that supports the introduction of novelty in the relationship.

Contract Completeness

Contract completeness refers to the type and level of contractual sufficiency and adequacy. The three emergent sub-items in this dimension are:

- Clarity – The extent to which the contract obligations have been written down through consistent definitions and transparent contract terms (Haapio, 2013). However, various issues can arise between the pre-contract definition and the actual implementation, no matter how clear the contract can be.
- Specificity – *"The extent to which technical specifications of the service/product, implementation procedures, financial and legal considerations, and overall contractual features are specified in detail ex ante"* (Mooi & Gosh, 2010). This definition indicates that high level of specificity leads to more detailed, rigid and explicit contracts, while low level of specificity means more open and simple contracts.
- Measurement – *"The calculation and assessment of the exchanges"* (Kern & Willcocks, 2000). This notion refers to the monitoring metrics and procedures during the post-contract phase. Innovation is often considered critical when it comes to its performance measurement. Therefore, a careful consideration is needed when it comes to the definition of its metrics and targets.

2.4.3 Social Perspective

According to the sources analysed from the field of Relationship Marketing, the social conditions have been categorized in three main groups: Company Alignment, Behaviours, and Exchanges.

Company Alignment

Company alignment refers to the closeness of relational factors that are considered fundamental for a smooth management of the relationship. The followings are the subcategories identified during the literature review:

- Commitment – The willingness of the parties to exert effort and devote resources in order to sustain an ongoing relationship (Hirschheim, et al., 2002). This notion suggests that commitment has a long-term perspective and requires great motivation and a positive attitude from the collaborating parties.
- Mutual understanding – *"The degree of understanding of behaviours, goals, policies between partners"* (Lee & Kim, 1999). The literature on relationship management has highlighted the importance of a shared domain of knowledge between IT and business representatives, due to the

challenges that a lack of common "language" poses in the communication and process alignment (Blomqvista, et al., 2005).

- Culture – "*The closeness of behaviour patterns, values and norms within a partnership*" (Blumenberg, et al., 2008). Compatible cultures and the understanding of underlying differences helps individuals to interpret partners' organizational functioning and to align behaviours, policies and values.

Attitude

Attitude comprehends those social behaving and ways of thinking that affect the interactions between individuals and organizations. The three emergent sub-items in this dimension are:

- Transparency – "*The actions and outcomes of partner's work in terms of the communication that take place, processes followed or any other actions performed in respect to the outsourced work*" (Pasi, 2013). This definition highlights the importance of honesty and transparency to increase the partners' confidence in the relation. In particular, transparency refers to respect of the partner's wishes and promises and the honesty in delivering what has been agreed.
- Trust – "*The expectation that a party will act predictability, will fulfil its obligations, and will behave fairly even when the possibility for opportunism is present*" (Hirschheim, et al., 2002). High level of trust decreases the overall uncertainty of a relationship and improves its quality. Moreover, trust can emerge in two ways. First, as the degree to which one party considers the other one capable of fulfilling an agreement. Second, from a series of interactions and exchanges throughout the relationship (Kern & Willcocks, 2000).
- Conflict resolution – "*The extent to which disagreements are replaced by agreement and consensus*" (Robey, et al., 1989). Since conflicts are embedded in relationships and cannot be completely avoided, their management represents a critical part in a successful collaboration. Constructive conflict resolution is particularly important in innovation-oriented relationships, due to the complexity of the underlying technologies (Hirschheim, et al., 2002). Effective communication, creativity, and past experiences are key drivers to create a common ground for the mitigation of conflicts (Kern & Willcocks, 2000).

Exchanges

Social exchanges encompass the strategic sharing of organization's key information, people and resources based on personal and social networking elements. The following represent the identified sub-items:

- Info-sharing – "*The extent to which critical or proprietary information is communicated to one's partner*" (Lee & Kim, 1999). This definition suggests that a correct sharing of information support the creation of a competitive advantage. Moreover, various scholars have shown that a frequent and consistent exchange of information can improve the closeness of the relationship (Henderson, 1990).
- Skill transfer – The extent to which an organization ensures the presence of those skills necessary to align in-house processes with outsourced activities (Willcocks, 2006). This notion implies the critical role of people and capabilities within an inter-firm relationship, as well as the importance of ensuring that the outsourced teams are up to speed with the internal operations.
- Personal and social bonds – Social ties contribute by providing an existing network upon which a collaboration can be built. Personal bonds ensure the building of trust and commitment and have a strong effect on partners' satisfaction (Kern & Willcocks, 2000). In some cases, personal ties are even able to replace the monetary focus, thus determining "*the raison d'être for the relationships' flourishing*" (Robinson, 1996).

2.4.4 The Provisional Framework

After having outlined the different dimensions, items, and sub-items that characterize the formation of vendor-client collaboration, it is possible to build a multi-dimensional framework (Table 1 & Figure 4). This framework sets the foundation for the analysis of the different facets of vendor-client relationships, which will be assessed in an empirical context.

			Items																											
			Contractual									Social									Organizational									
			Objectives			Incentives			Completeness			Alignment			Attitude			Exchanges			Interactions			Planning			Structures		
			Common vision & goals	Promises	Long-term orientation	Mutual gain/risk	IP Management	Pricing model	Clarity	Specificity	Measurement	Commitment	Mutual understanding	Culture	Transparency	Trust	Conflict resolution	Info-sharing	Skills transfer	Personal and social bonds	Communication	Coordination	Cooperation	Flexibility	Joint action	Project management skills	Power	Sen. Mgmt. support & buy-in	Roles & responsibilities
References	1	(Blumenberg, et al., 2008)	X			X		X	X	X		X	X	X		X	X	X			X			X					X
	2	(Cong & Chau, 2010)			X				X	X		X				X					X								
	3	(Matevz & Maja, 2013)										X				X	X			X				X	X				
	4	(Kern & Willcocks, 2000)	X	X		X		X		X	X	X		X		X	X			X	X	X	X	X			X		
	5	(Aloini & Dulmin, 2015)	X		X		X					X		X															
	6	(Hirschheim, et al., 2002)	X											X		X					X			X					
	7	(Willcocks, 2006)	X		X	X		X		X		X		X		X			X	X	X	X							
	8	(Babin & Schuster, 2012)	X	X							X	X				X	X			X			X	X					
	9	(Gupta & Sahu, 2012)	X			X						X				X	X				X	X	X					X	
	10	(Namwoon & Srivastava, 1998)															X				X							X	
	11	(Coates & Bals, 2013)	X						X		X	X		X				X			X					X	X	X	X
	12	(Pasi, 2013)		X											X						X					X			

17

#	Reference	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
13	**(Rhodes, et al., 2016)**								X	X	X			X	X	X	X						
14	**(Wüllenweber, et al., 2008)**									X	X			X		X							
15	**(Kern & Willcocks, 2002)**			X		X	X			X	X	X			X					X	X	X	
16	**(Sheng, et al., 2012)**		X							X													
17	**(Gupta & Sushil, 2014)**	X		X	X		X			X							X						
18	**(Kern & Willcocks, 2001)**	X	X				X			X	X			X			X		X	X			X
19	**(McFarlan & Nolan, 1995)**						X		X				X	X			X				X		
20	**(Lee & Kim, 1999)**						X	X	X	X				X	X			X			X		
21	**(Emden, et al., 2006)**	X	X				X		X								X						

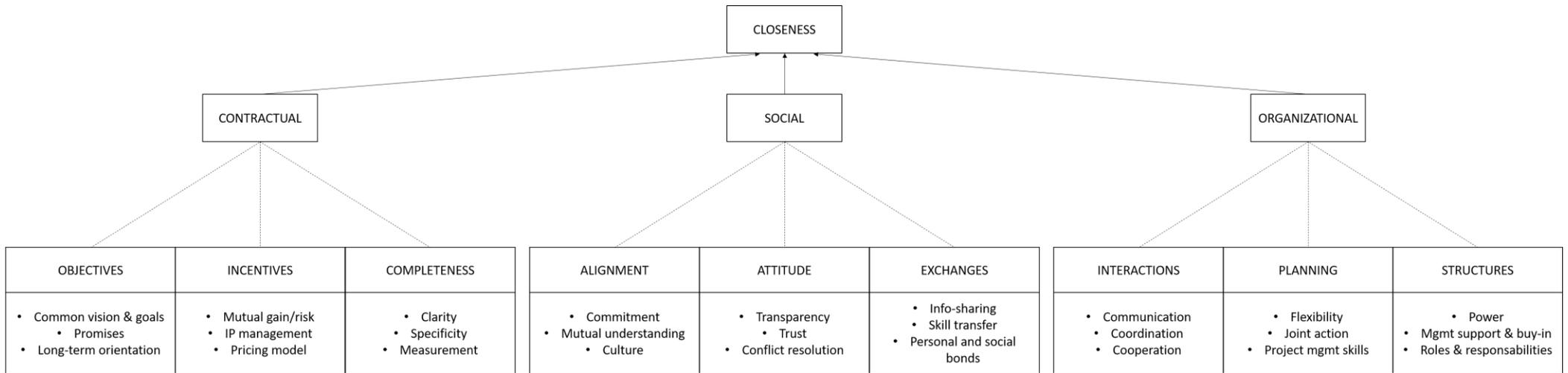Table 1. Items & sub-items identified during the literature review

Figure 4. Provisional framework – Items & sub-items

3. Research Methodology

The research begins with a review of the existing literature on IT relationship management and Open Innovation. By addressing these topics it is possible to develop a set of research questions and sub-questions. The second phase consists of a qualitative embedded case study, where each vendor-client relationship will be the unit of analysis. After an analysis of each embedded case, cross-case conclusions will be drawn. The first research sub-question will be answered by assessing the Conceptual Model proposed in section 1.4 through the analysis of the explanatory power of each case. Next, evaluating the theoretical framework developed in section 2.4.4 will allow to answer the second sub-question. Finally, the research will propose a set of practical recommendations, based on the insights from the theoretical knowledge and the empirical investigation. Specifically, this part will propose an IT Partnership Framework whose objective is to provide managerial and practical guidelines for ensuring company alignment and improving the formation of innovation partnerships with strategic IT vendors in the airline context. The research activities are displayed in Figure 5.
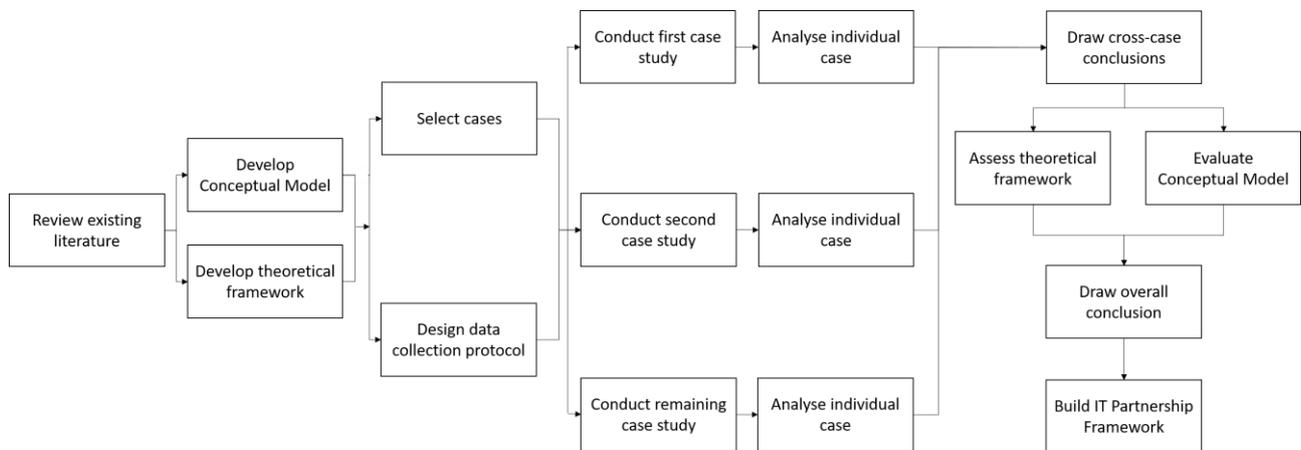

Figure 5. Research framework

3.1 Desk research

To start the research, an initial literature review was be carried out. As described in Section 1, the topic covered throughout the literature study was Relationship Management within the IT service domain, with a particular focus on the application of the Open Innovation thinking. Within the context of Relationship Management and in line with the three dimensions identified in the preliminary literature review, this study was based on the literature on Alliance Theory, Relationship Marketing Theory, and Contractual Theory. The first one allows to identify patterns, roles and structures used by an organization to achieve specific goals. These patterns can be brought together to elaborate normative theories on how to best manage an organization. Moreover, Alliance Theory helps identifying erroneous forms of business practise and builds on them correcting measures. The second theory is defined as "*a strategic process aiming to establish, develop, maintain and strengthen the network of relationships with various stakeholders on the basis of strong economic and social standards and the achievement of common objectives*" (Benouakrim & El Kandoussi, 2013). It studies the influence of factors such as trust, commitment, and satisfaction in relation with their future consequences, like loyalty, cooperation and performance (Payne, 2000). Lastly, Contractual theory analyses the design of formal and informal agreements to stimulate cooperation and mutual benefits within a collaboration between two or more parties (Hart & Holmstrom, 2016).

Such research process provided a theoretical foundation to build the conceptual model in section 1.4, as well to determine the generalized conditions for the inter-firm alignment during the formation of innovation partnerships with strategic IT vendors (Figure 6). Such conceptual framework will be tested against an embedded case study. The outcome of this assessment will allow to determine the explanatory power of each dimension and which of them has a higher impact in the formation of IT vendor-client strategic partnerships. In addition, the findings from the cases will provide additional insights on the contractual, organization and social conditions necessary for the formation of innovation partnerships. Finally, the collected material will be

used as a basis to define firm-specific recommendations, which represent the pragmatic side of the research and the contribution to the application environment. Important to note is that despite the contribution that a survey could have brought to this research, the impossibility to have access to a large number of people impeded the researcher to carry out such research activity.

3.2 Case study protocol

For the empirical investigation of this research a qualitative case study approach has been chosen. According to Yin (2014), the essence of a case study is that *"it tries to illuminate a decision or a set of decisions: why they were taken, how they were implemented, and with what results"*. The explanatory nature of this research fits the abundance of knowledge that generally characterizes supplier-client relationships. This methodology facilities the explanation of a particular phenomenon within a certain context through the analysis of various data sources (Baxter & Jack, 2008). Moreover, it allows the researcher to study a phenomenon through multiple lenses, as to provide a deeper understanding of the different facets of such reality. This approach is based on the constructivist paradigm, which claims that *"truth is relative and that it is dependent on one's perspective"* (Baxter & Jack, 2008). It relies on a social construction of reality and allows the researcher for a close collaboration with the participants. As such, the participants are able to describe their views of the phenomenon at hand, which yield to a deeper understanding of their perspectives (Lather, 1992).

Despite the case study methodology is rarely used in theory-testing, scholars are increasingly calling for the application of such methodology in causal research (Campbell, 1975) (Flyvbjerg, 2006) (de Reuver, 2009). In particular, Flyvbjerg (2006) has described the five main misunderstandings and simplifications of case study research: (i) General and theoretical knowledge is more relevant than context-depend knowledge; (ii) Case study research cannot provide the same degree of generalizability of quantitative methods; (iii) Case study research is appropriate for hypothesis generation, while quantitative methods suit best hypothesis testing; (iv) Case study research contains a tendency towards verification of the researcher's hypothesis; (v) Specific case studies do not provide ground for the development of general theories. In contrast to these misconceptions, it has been argued that: (i) Context-dependence insights are more relevant than universal knowledge as predictive theories cannot be found in the study of business and activities of the individual; (ii) The "force of example" is often underrated, since it can contribute to general knowledge as complement or substitute of other methodologies (iii) The generalizability of the findings can be increased through a strategic selection of the cases. Moreover, from an action-research perspective, it is often more important to identify the root causes of a problem, rather than its symptoms; (iv) Research expertise suggests that the case study approach has higher bias towards falsification than verification; (v) The difficulty in summarizing case studies is often due to the complexity of the reality under research, rather than to the case study as research methodology.

The explanatory nature of this study will be addressed with a series of study cases. In particular, an embedded case study approach will be adopted. The term "embedded" refers to the fact that the cases under analysis are part of a larger case study, as they are located within a broader perspective (Yin, 2003) (Newton, 2003). As distinct from a case study, an embedded case study requires the identification of sub-units of analysis, which enables a deeper level of analysis. As stated in the previous sections, the research will investigate cases from the AFKL working setting, which was selected for its representativeness as a world leader in the airline service industry. In particular, it will focus on the IT and Business functions. Moreover, the cases under study relate to strategic vendor management, where each relationship with a specific vendor represents the embedded unit of analysis (Figure 6). Such research methodology allows to obtain a comprehensive view of the phenomena under study and formulate causal explanations and descriptions based on observations. In addition, as the case *"is faceted or embedded in a conceptual grid"*, it enables the researcher to capture key human and environmental elements, which represents crucial information in this particular study (Scholz & Binder, 2011).
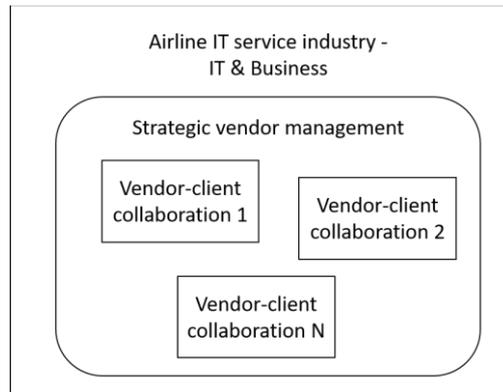
Figure 6. Embedded case study

However, this methodology has some limitations. First, the limited number of cases under analysis might provide limited ground for reliability and generality of the results (Soy, 2006). Second, a case study methodology is time-consuming, both for the collection and the analysis of the data. Third, qualitative case study do not lend themselves to numerical representation, which may hamper its persuasion power (Yin, 2009).

3.2.1 Case selection

In order to select the sample, few boundaries have been defined. These boundaries are based the criteria proposed by Baxter and Jack (2008), namely time, place, definition and context.

- Time – collaborations that have been started in the recent past and whose outcomes (either success or failure) can be determined.
- Place – collaborations that have been carried out in The Netherlands. The involved vendors do not necessarily need to be based in The Netherlands.
- Definition – collaborations that aim at adding strategic value and innovativeness to AFKL's portfolio.
- Context – collaborations with vendor from the IT domain, either as consultant, service provider or start-up.

In addition, two other dimensions have been considered for the selection of the case studies, in line with the knowledge developed during the literature review and with the different kinds of collaborations AFKL is usually involved in (Table 2).

The first dimension relates to the *vendor type* involved in the relationship: existing or prospective. *Existing vendors* are those who have been working together with AFKL for several years and are usually represented by large, established and well-known IT firms. These organizations generally offer AFKL those technical capabilities and comprehensive knowledge necessary to start new processes or platforms. Moreover, it can be argued that the relations with existing vendors are typically characterized by an initial higher degree of company alignment. *Prospective vendors* are those with whom AFKL has not established collaborations yet, or have been approached only recently. Generally, these firms are start-ups with a deep technical knowledge on specific technologies and related products/services and the potential to develop disruptive innovations in the airline context. Through this dimension it is possible to incorporate the moderators (e.g., Vendor Size and Relationship Age) of the Conceptual Model described in Section 1.5: by selecting both small and large vendors and by studying collaborations that are either the first point of contact between firms or come from a long history of joint activities, it is possible to assess their moderating power.

The second dimension relates to the outcome of the collaboration projects: success or failure. A collaboration can be labelled as a *success* if its degree of inter-firm alignment led to meet the targets of the IT management in terms of added-value and innovative content. On the contrary, *failures* happen in case the collaboration targeting innovation has prematurely ended or it did not meet the expectations of the client firm, because of a scarce level of inter-firm alignment. This way, their analysis will provide a deeper understanding of the factors that either enhance or hinder the formation of innovation partnerships with strategic IT vendors.

		Vendor type	
		Existing	Prospective
Outcome	Success	TCS	Digital Genius
	Failure	Microsoft	-

Table 2. The case study selection matrix

Important to note it that one cell of the matrix (Prospective, Failure) could not be filled, due to the complexities encountered during the empirical investigation. Even though we tried to identify and study one unsuccessful innovation project developed with an external partner (Ortec), the results turned out not to be relevant for the topic under study. Specifically, the outcome of the analysis showed that internal AFKL complexities as a consequence of the after-merger integration led to several complications and problems, which in turn prevented Ortec to become a real innovation partner for the specific collaboration. This reflected on our investigation by making the theoretical framework difficult to measure and by conducting interviews that had to excessively deviate from the interview protocol.

3.2.2 Data collection

Because of the various dimensions of the phenomenon under analysis and the "soft" aspects of the relationship governance that will be addressed, interviews will represent the main source of information. This choice is also due to the impossibility to distribute surveys to AFKL employees, as well as for a lack of abundancy and inaccessibility of secondary data such as reports, white papers or contractual agreements.

The semi-structure interviews will target subjects from the following domains:

- Experts in the field of IT vendor management, e.g. (strategic) vendor managers, procurement and purchasing managers.
- Experts in innovation management, e.g. those working in the AFKL technology labs.
- Experts from the business domain who work in close collaboration with the IT department.
- Experts from the vendor firm, e.g. account or IT managers who were directly involved in promoting the collaboration with AFKL.

By adopting semi-structured interviews it will be possible to steer the interview in order to identify new possible ways of looking and understanding the topic at stake (Patton, 2002). Moreover, this method allows the collection company-specific data, as well as positive or negative statements on the different factors presented in the framework of section 2.4.4 (Vershuren & Doorewaard, 2010).

Generally, three to four persons will be interviewed per case: one from the vendor side and two-three from AFKL. This choice is in line with the goal of collecting as many information as possible in every single case in the limited amount of time available for this research. The interviewees will be selected based on their specific knowledge of the case, as well as their degree of participation and responsibility.

3.2.3 Interview protocol

Drawn from the Provisional Framework described in Section 2.4, the interview protocol is composed by three main parts (Table 3). Each part reflects the organizational, social and contractual dimensions derived from the literature review and represents the starting point and interview guideline for the interviewer. Specifically, every question has been developed to cover one of the nine items displayed in Table 2.5.4, for a total of nine main questions. Additionally, introductive and closing questions have been incorporated in the interview protocol in order to contextualize the study case, identify background conditions and collect overall conclusions and opinions from the interviewees. The interview protocol can be found in the Appendix 1.

Dimension	Items	Questions
Contractual	Objectives	- What were the main strategic objectives of the collaboration and how did you reach a common agreement? Which ones were agreed formally and which ones informally?
	Incentives	- How did AFKL compensate X in introducing innovative solutions?
	Completeness	- Which type of information and which level of detail have been used in writing the contract?
Social	Alignment	- What were the main points of alignment/misalignment? In your opinion, what were the underlying causes?
	Attitude	- Which attitude did the people have towards the discussion of the collaboration in the initial phases of the relationship?
	Exchanges	- How did relations on a personal level influence the information and knowledge exchanges during the initial phases of the collaboration?
Organizational	Interactions	- What kinds of mechanisms did you use to support the interactions between the two organizations?
	Planning	- How did you manage the future planning of the collaboration? How did you decrease its level of complexity?
	Structures	- How was the collaboration building process managed in terms of management structures and resource control?

Table 3. Conversion of category items into interview questions

3.2.4 Data analysis

During this phase, each vendor-client relationship will be analysed independently. First, each interview will be transcribed and fed back to participants for validation. After, these transcripts will be analysed using Atlas.ti 8.0, a dedicated software for qualitative research that enables a more structured approach and analysis. The coding procedure is based on selective coding, following Strauss & Corbin (2008). In line with this methodology, the set of items identified during the literature review and displayed in section 2.4.4 will be use as guideline of the coding procedure. After having assigned codes, we will reduce their number and the level of complexity by grouping them in higher-level categories. In addition, the proposed software will enable the identification of patterns and key concepts, as well as to measure their density and groundeness. During this phase, we will try to focus not only on the codes, but also on the underlying circumstances, as to consider all the contingencies that could influence the Conceptual Model. After having coded the individual interviews, we will build a network view where the most relevant codes are incorporated and analysed in relation with each other. Based on this map and on the coding activity, conclusions will be drawn for each specific case. In the following phase a cross-case analysis will allow the researcher to find patterns across the different cases. Finally, the findings from the cross-case analysis will allow the researcher to determine the explanatory power of the contractual, social and organizational dimension, as well as determine the actions to undertake to support inter-firm alignment.

4. Case study

In the following sections the results from the case studies are presented. Each section first provides a short overview of the innovation project and a brief description of the interviewees. Second, the narrative of the case is described. Third, the results from the analysis are presented against the Framework proposed in section 2.4.4. Moreover, a description of each dimension is provided. Fourth, the findings from the case are used to assess the Conceptual Model of section 1.4. Lastly, a reflection of the most important elements of the case are highlighted.

4.1 Digital Genius (DG) Case

4.1.1 Introduction

The innovation project under study has started in the mid-2016 and concerns the automation of the social media's customer service (i.e., Messenger, WeChat, Twitter) through the application of Artificial Intelligence (AI). Since questions on social media are growing day by day and everything is text-based, AFKL have identified in technologies such as AI a powerful tool to handle growing volumes against same costs and same service level. Nowadays there is a lot of noise around AI and various companies are investing many resources on its development. Potentially, a wide range of service firms can benefit from this technology, whose applications and potential are still not completely clear.

This case has been selected to analyse the way AFKL have successfully dealt the collaboration with the outsourcing provider Digital Genius for the development and application of AI software to the social media customer service.

Digital Genius is a small start-up based in London whose expertise revolves around artificial intelligence and deep learning for the development of AI applications for the customer service operations. Thanks to their platforms, firms can automate and increase the efficiency and effectiveness of their text-based customer service, such as email, social media chat and mobile messaging. The collaboration with AFKL represents the first project between the two organizations and consists of an outsourcing agreement for the development of a software application.

The interviewees

In total, three interviews have been carried out to collect the information on this case. The interviewees are displayed in Table 4. These figures have been selected for their extensive knowledge of the case under study, as well as for the responsibilities they have in the decision-making process of the project. In particular, the AFKL interviewees have been chosen from the Social Media domain, the only department involved in this project.

Code	Company	Role	Responsibility
AFKL-1	AFKL	Team manager and Social media developer	Responsible for the development of all the applications in Social Media
AFKL-2	AFKL	IT Trainee	Responsible for development of AI capabilities within the Social Media technology domain
DG-1	DG	Project Manager and Product Owner	DG's responsible for the definition and overall development of the project

Table 4. Interviewees

Background

The project under study started in 2016 and was triggered by the need of improving the efficiency of the customer service of media platforms. Based on the narrative of the case, Figure 6 displays the different phases that have characterized it.
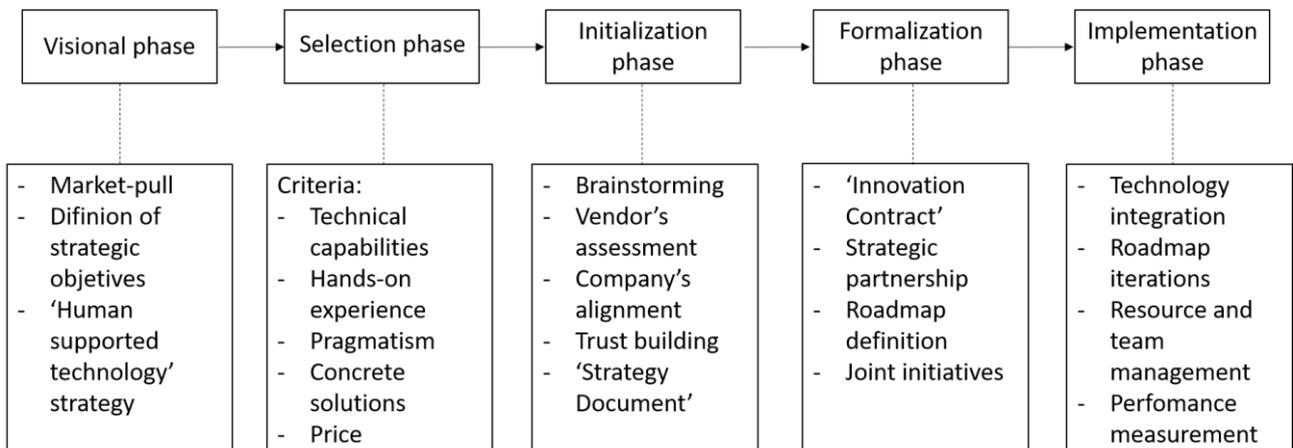
Visional phase	Selection phase	Initialization phase	Formalization phase	Implementation phase
- Market-pull - Difinion of strategic objetives - 'Human supported technology' strategy	Criteria: - Technical capabilities - Hands-on experience - Pragmatism - Concrete solutions - Price	- Brainstorming - Vendor's assessment - Company's alignment - Trust building - 'Strategy Document'	- 'Innovation Contract' - Strategic partnership - Roadmap definition - Joint initiatives	- Technology integration - Roadmap iterations - Resource and team management - Perfomance measurement

Figure 7. Partnership formation process

The project started with the formulation of an internal strategy called "Human supported by technology", which would have accomplished the three strategic goals of AFKL Social Media domain: (i) constantly be where the customers are (e.g., Social media platforms), (ii) handle growing volumes against same costs and service level and (iii) serve the customer with a correct and personal answer.

In order to implement this strategy, AFKL decided to outsource the development of the solution to a start-up named Digital Genius.

> *We found only one company, DG, which actually thought about the customer service use case. All the other companies would present us ppt, lot of slides about the approach or governance and project structure, but not really about the content. DG had already built something for Unilever [...] Their solution was exactly what we needed [...] it was actually something real, or that seems real. Then we decided to do a pilot with DG and leave all the other ones behind. (AFKL-1)*

The initial phase of the collaboration was mainly driven by informal agreements and was characterized by frequent contact between the managers responsible for the relationship. The main objective was to get to know each other, build trust and align goals and expectations. The outcome of the initial phase was a strategy document specifying the high-level elements of the outsourcing agreement (e.g., business problem, strategic objectives).

> *In the beginning it was a very loose process based on emails. Now we discuss a lot of topics, what we want, what our requirements are. (AFKL-2)*

> *In order to agree on these (strategic goals), we wrote down a Strategy Document, which we shared with DG. But we did not have a formal approval process. On the contract, we mentioned out strategic objectives. However, we first discussed them from a product perspective, what the service really needs to include (channels, languages, etc.). (AFKL-1)*

Thanks to the initial positive results and trust built between the teams, AFKL decided to formalize the collaboration by designing a new "Innovation Contract" in January 2017. In this contract the terms of the collaboration (e.g., price, shared resources, joint marketing campaign) were defined.

> *Thanks to the Innovation Contract, we could make our cooperation explicit. We could very clearly say we had a very cheap price (50k), but in return they could use KLM name and use facilities and test new product with us. We arrived to this new contract because we saw the cooperation was working really well [...] This is also good for KLM because in that way we can position ourselves as a very innovative party by collaborating with new start-ups. (AFKL-1)*

Important to note is that the contract was kept under the responsibility of a single domain (Business domain).

> *We wanted to have the contract specifically within Business and not yet within IT. We did not want to go through to formal processes, we were afraid of them. In the business you can more easily test new*

and small things without putting in it an architecture committee and all the permits, etc. Moreover, we could do it for one airline, which is much easier because it is only one business unit to work with. These factors – no formal processes and airline specificity – really made it successful, because you really have high autonomy in the management of the relationship. (AFKL-1)

Social media has a more external oriented approach for IT development, where speed is a priority. (AFKL-2)

In addition, the contract itself has been designed to be mutually advantageous for both parties. On the one hand, AFKL reduced the project risk with a low contractual price; on the other hand, DG had the opportunity to mature their product in open testing environment, as well to take advantage of AFKL's marketing channels.

The contract was sort of no-loss agreement for us. It was a kind of experiment, since it was completely new for us. Investing a lot of money would represent a large risk. So we designed an innovation contract, where we promised them a lot of feedback and input, and we decided for a co-development. We also basically determined their roadmap for the coming years based on a small fee. For them, it was vital information, since we are a very big and professional company with a lot of information. This allowed them to grow into a more mature company. For us it was a chance to see whether this technology would mature and work, and in the end to be innovative. (AFKL-2)

We are charging KLM less than a regular customer. In return, they provide us access to their facilities and 250 agents, which is a very large number for us. (DG-1)

Generally, the collaboration has always been characterized by a positive atmosphere, few conflicts and satisfactory results. F2F management meetings, frequent contact and feedback, similar and simple working structures and same working methodology allowed the two companies to establish a very open and collaborative partnership. At the same time, a very pragmatic attitude and a young and autonomous management created an environment where speed and tangible results were the main priorities and represented the drivers for the successful collaboration.

4.1.2 Findings

This section presents the key elements mentioned during the interviews. The table below is organized in accordance with the theoretical framework proposed in section 2.4.4.

Dimension	Sub-dimension	Key findings
Contractual	Objectives	- Formalization of high-level objectives - Long-term orientation - Focus on a single product - Shared strategic roadmap
	Incentives	- Fixed price model - Mutual contractual benefits
	Completeness	- Low-detailed contract - No specification on deliverables - Clarity of objectives - Informal performance measurement
Social	Alignment	- Low cultural distance - High commitment
	Attitude	- High pragmatism - High transparency - High trust - Strong interpersonal relationships at management level
	Exchange	- Full resource and people access - Constant data exchange
Organizational	Interactions	- Frequent feedback - Regular alignment meetings - Multiple channels of communication

		- Direct communication between teams
	Planning	- Flexible planning based on one-year roadmap - High coordination
	Structures	- Few managers in charge of decisions - Split responsibilities - High decisional autonomy - Fast decision-making process - Similar working structures - Same working methodology (Agile) - High process flexibility - Dedicated teams

Table 5. Key findings

4.1.3 The three dimensions

The following sections summarize the most important and cited elements of the three dimensions of this collaboration.

4.1.3.1 The contractual dimension

From a contractual perspective, the interviewees highlighted the informality of their agreements, as well as the marginal role that the definition of a specific contract had at the beginning of the collaboration. A simple and low-detailed contract was the natural outcome of several discussions at management level and was driven by matching strategic interests and based on mutual trust.

> *They know our vision and ambition, and we know their vision. We have separate visions and ambitions but we work together because we have matching interests at the end. (AFKL-2)*

> *In terms of getting to where we are now – innovation partners - that was not something that happened right at the beginning. It was not an agreement before we started our pilot. In my feeling, it worked out like this because it was the best for both parties. It was a strategic choice. We had common strategic objectives. (DG-1)*

The contract itself did not comprehend the definition of technical specifications to be delivered. On the contrary, the agreement on high-level objectives gave DG more freedom in the development of the product. Important to note was also the effort made by AFKL to obtain a low contractual price in return to several non-monetary benefits, such as fast feedback, access to information, people and resources and an open testing environment.

> *While setting up the contract the most challenging part was to get agreement on the price. Our position towards DG was to get a really low price because they could do all they research on customer for free with us and we could give them a level of access that you normally do not get when you work with large corporates. (AFKL-1)*

> *We had the advantage to receive very quick feedback, compared to other regular customers. [...] Moreover, we provided them a special treatment with a very low annual fee of 50k. (DG-1)*

At the same time, the design of the Innovation Contract and the choice of outsourcing the development of a non-core system allowed AFKL to reduce the investment and project risks usually associated with small start-ups.

Among the different topics of discussion, the most important elements mentioned within the contractual dimension were:

- Definition of a joint roadmap based on a single simple product and clear business goals, rather than on a set of functional specifications.

- Initial phase of the collaboration mainly driven by informal agreements, mutual personal trust and commitment.
- DG's contractual preferential treatment in comparison with other partners.
- Definition of a formal contract only after tangible initial results.
- Informal performance measurement.

4.1.3.2 Social dimension

Within the social dimension, building trust and transparency represented a crucial phase to form the strategic partnership, considering also that this collaboration was the first point of contact between the two firms. The commitment proven by DG was key to overcome the contractual barriers that are typical of big IT projects. Specifically, the positive atmosphere was built during the initial phases of the relationship by investing in one-to-one relations, company visits and constant communication between the management of the two companies.

> *From the very start there were always been a very open and collaborative partnership. The DG guys came to visit very frequently with the relevant people from their team. They really understood that it is really important to have that personal connection. It has been a very positive collaboration, also from a relation point of view. (AFKL-1)*

> *Interpersonally we have good relations. It helps sharing knowledge and making sure we are on the right track and keep the atmosphere collaborative. (DG-1)*

In addition, a transparent environment enabled the two companies to share resources and critical information, which greatly impact the speed and the quality of the project.

> *Another thing was that we really gave them full access. No secrets, no lock doors. They had access to us, our agents, and business people. They could really go through the processes and really understand our needs. (AFKL-2)*

A very pragmatic attitude was another important ingredient for success. This was fostered by sharing a single roadmap and by iteratively prioritizing strategic items according to business value, as well as by a fast decision-making process.

> *They showed us their roadmap and we provide inputs and we prioritize the items in their roadmap. They are in control, but in the end we work together in this. It is a very close relationship. (AFKL-2)*

Among the different topics of discussion, the most important elements mentioned within the social dimension were:

- Importance of personal bonds created at management level.
- High level of transparency between the two companies in regards to data and resource exchange.
- Pragmatic attitude as key factor to achieve fast and tangible progress.

4.1.3.3 Organizational dimension

From an organizational perspective, common working methodologies and simple working structures allowed the two companies to achieve high coordination. Moreover, decisional autonomy and a limited number of managers involved in the decision-making enabled to speed up the development of the project and overcome problems in a more efficient and effective manner.

> *When it comes to common structures, we have the same working methodology – SCRUM. In both teams there are the same roles even though we did not agree on that. This makes it easier for both of us, since we know the respective roles. We have the same structure here, so it is very easily identify whom we should talk to. (AFKL-1)*

> *The relationship is on different levels [...] Executives focus on strategy, project managers make sure of the ongoing health of the project, and the product owner discuss the future of deployments and the future planning. Both parties work with similar structures and this helped the collaboration. (DG-1)*

Furthermore, the two management stressed the importance of having constant and direct functional communication.

> *[...] Here, IT, Business and IMO are in the same room. Hierarchically I am in IT, but functionally Martine is my boss. Getting everybody in the same room helps a lot. However, you have to be sure also not to be dependent on permit processes or the other million impediments we are used to when you have to get something done here. (AFKL-2)*

In addition, the possibility to scale up the resources when necessary and flexible and informal processes guaranteed a smooth management of the relationship.

> *This is because one of the great benefit of KLM is that they are very agile when it comes to making upgrades, they always have resources available for us. (DG-1)*

> *We have the scale, the control and everybody in the same room. We can do this. We are not dependent on others. (AFKL-2)*

Among the different topics of discussion, the most important elements mentioned within the organizational dimension were:

- Decisional autonomy from both parties.
- Few managers responsible for decisions.
- Direct and quick communication between teams, without intermediaries.
- Long-term planning based on a co-defined roadmap.
- Similar working methodologies and working structures.
- Constant feedback as a mean to achieve coordination.
- Flexible processes.

4.1.4 Conceptual analysis

By analysing the project under three different perspectives, it is now possible to compare their explanatory power in relation to the dependent variable (e.g., Company alignment) of the conceptual model described in section 1.4, as well as to assess their overall influence on the outcome of the collaboration. Table 6 provides an overview of the findings, where the plus and minus signs indicate the direction of our qualitative results.

		Company alignment
Conditions	Contractual	+
	Social	+ +
	Organizational	+ +

Table 6. Summary table

The *contractual dimension* seems to be the least powerful dimension in the case under study. Although the strategic objectives have been initially agreed and written down in a shared strategy document, the only formal contractual agreement - the "Innovation Contract" - has been defined only after the initial phase of the collaboration. During this period the two companies had the time to assess the quality and expectations of the co-development, as well as build mutual trust. Few of the terms agreed on the contract - extremely low DG's fee, full access to AFKL's resources and joint PR initiatives – represents the most important and interesting elements from a contractual perspective. In addition, it can be argued that contractual governance mechanisms had a marginal impact in achieving inter-firm alignment, due to a stronger presence of outcome-based and behavioural control mechanisms and a strong sense of mutual accountability.

On the other hand, the *social dimension* greatly influenced the alignment of the two companies. Specifically, all the interviewees highlighted the positive impact that creating a warm and transparent environment at every hierarchical level through F2F individual meetings and constant communication had on the relationship. A transparent attitude allowed to increase the level of trust between the two companies, improved working relationships and represented a preliminary condition for the formalization of the strategic partnership. In this regard, it can be argued that a collaboration initially based on relational governance mechanisms enabled the

two organizations to more easily define and strengthen contractual agreements at later stages, thus suggesting a strong interrelation between social and contractual dimensions.

Finally, the analysis part suggests that the *organizational dimension* also played a critical role in the alignment of the two organizations. Specifically, the decisional autonomy of the involved managers, fast decision-making, flexible processes, and an iterative planning enabled the two organizations to continuously prioritize the product backlog and redefine the strategic direction. In addition, simple, transparent and similar organizational structures and direct and quick communication greatly supported the creation and development of close working relations and mutual company trust. As such, the findings suggest that the organizational dimension is fairly intertwined with the social one and, as such, requires high attention by both IT and business managers.

4.1.6 Reflection

This section goes deeper into the factors and elements that have been identified as more relevant during the analysis of the interviewees' answers and the coding procedure, as part of the overall analysis.

Specifically, three main elements have been identified as critical for the success of this collaboration: (i) outsource the development to a small start-up rather than to a big corporate; (ii) guarantee decisional autonomy from both parties (iii) create a very transparent and open environment in the initial phase of the project. These three main elements are explained and illustrated in the figures in the remaining chapters.

Collaborating with a Start-up

Figure 8 displays the elements that characterize a start-up environment and the linkages between them. DG has been selected because of their high *technical and specific capabilities* in the field of AI applied to the customer service operations.

> *What makes this project a great success is that they were very capable. They really made a good product. (AFKL-2)*

> *I trust DG right now because I have seen what they can do, I have met their people. I have had long discussion with them on AI so I know how they think. We need their people and we have a good idea of what they are capable of. They also proved that they are capable to deliver what they promised. (AFKL-2)*

Moreover, the choice to work with a small company rather than a big corporate was due to their ability to deliver tangible results in a short amount of time, due to the *pragmatic attitude* that characterizes its management and the *simple structure* as a result of its *small size*. This also helped to avoid all the formal agreements and decision layers that are often characteristics of big corporates.

> *The start-up is dependent on the idea they are selling, on the product. Big corporates deliver people. This is a big difference. DG are very pragmatic, while others are extremely process-oriented. Sometimes they forget the content and what it is really about, but they just follow the process. (AFKL-1)*

On the contrary, the uncertainty characterizing projects with small start-ups has been balanced by giving AFKL part of the control of DG's *roadmap*, as well as by outsourcing a non-core system and designing a contract with very low financial risk.

> *We let KLM know what we are searching and where we are planning to go in the future and then we get feedback from that. We share our 2017 roadmap with KLM team and they give us feedback in terms of what they want to prototype. It is important that KLM is buying in what we are building. (DG-1)*

> *Contract wise we have a low set fee for one year. That is it. They lose money on it. Their development costs are much higher than what we pay. (AFKL-2)*

This has been agreed also thanks to the *preferential treatment* given to AFKL. This was the consequence of the several advantages that come from working with a large and well-known partner (e.g., exposure, ability to

develop their product, quick feedback, large amount of resources) and DG's need to grow and become a mature company.

> *KLM is one of our top clients, so it was in our go-to-market strategy to have a company like KLM willing to build an innovation partnership. Since there is ongoing innovation, it is very helpful for us to have a relationship like that, which brings our product to the market [...] At the same time, there was a common understanding that KLM would have received a preferential treatment in some sense. (DG-1)*

Finally, the focus on a *single* and *simple product* and the definition of a *clear vision* enabled to create the conditions for a successful co-development.

> *[...] A simple enough product and vision to start with was also another important ingredient for success. (AFKL-2)*

It is also important to note the *mutual dependency* that has been created during the project. In fact, during the interviews has been highlighted that working with small start-ups does not only bring benefits, but implies high risks too. It is in fact difficult to assess the real technical and financial capabilities of small and not known companies, as well as there is the risk to become completely locked-in with a single vendor.

> *[...] but it is also risky for us when you have to depend heavily on a small party. We had cases before where we started to depend on small parties and eventually they went bankrupt or they were not mature or the technology platform was not solid, or they have oversold themselves to us [...] More strategically, looking at the contract, it would have been wiser to take a stake in DG, such as shares or participating in a round of funding. If you have a successful product and you implement it, you create a dependency. (AFKL-2)*
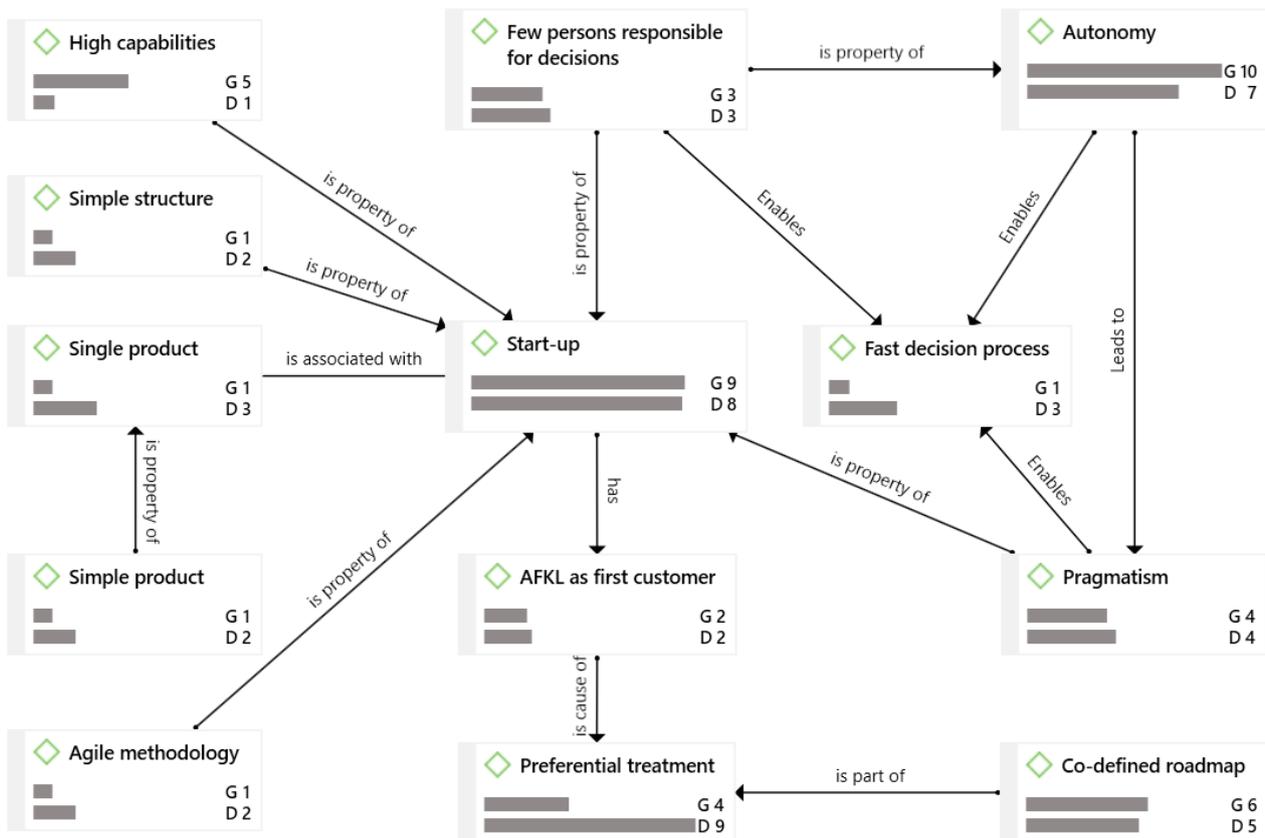

Figure 8. Start-up network view

Decisional autonomy

A second important factor was the ability of both parties to *autonomously take decisions* in a short period of time, as displayed in Figure X. Specifically, Social Media is a domain where *fast decision-making* and quick progress represent key priorities. For this reason, the teams decided to adopt an *agile way of working* and guarantee *resource support* and *direct communication* between teams, while trying to stay away from formal and bureaucratic processes.

> *From an agile mind-set, we believe that we need to have the best time-to-market. If people work with their hands on products, are completely supported. That is why we give them access to people that are directly involved in the development. We tried to stay away from heavy process where you have to go to A, B, C, D. but rather go to the person directly. (AFKL-2)*

> *They seem to be a good mix between the personal approach and processes. Processes to make sure that everything is safe, but they are not very rigid. They are able to do things without necessarily being part of a process, if that is judged to be worthwhile. (DG-1)*

In addition, the *loose and simple structure* that characterize both the Social Media Domain and DG and the project's *airline specificity* created an environment were few managers were fully in control and responsible for key decisions.

> *Autonomy was a key point. The autonomy to take your own decisions [...] Autonomy in both sides is important. DG is big enough to offer a professional service, but not that big that you are in a really big structure such as IBM, Accenture, Salesforce or TCS have. It is a group of couple of people who decides how the product looks like. This made the decision process faster (AFKL-1)*
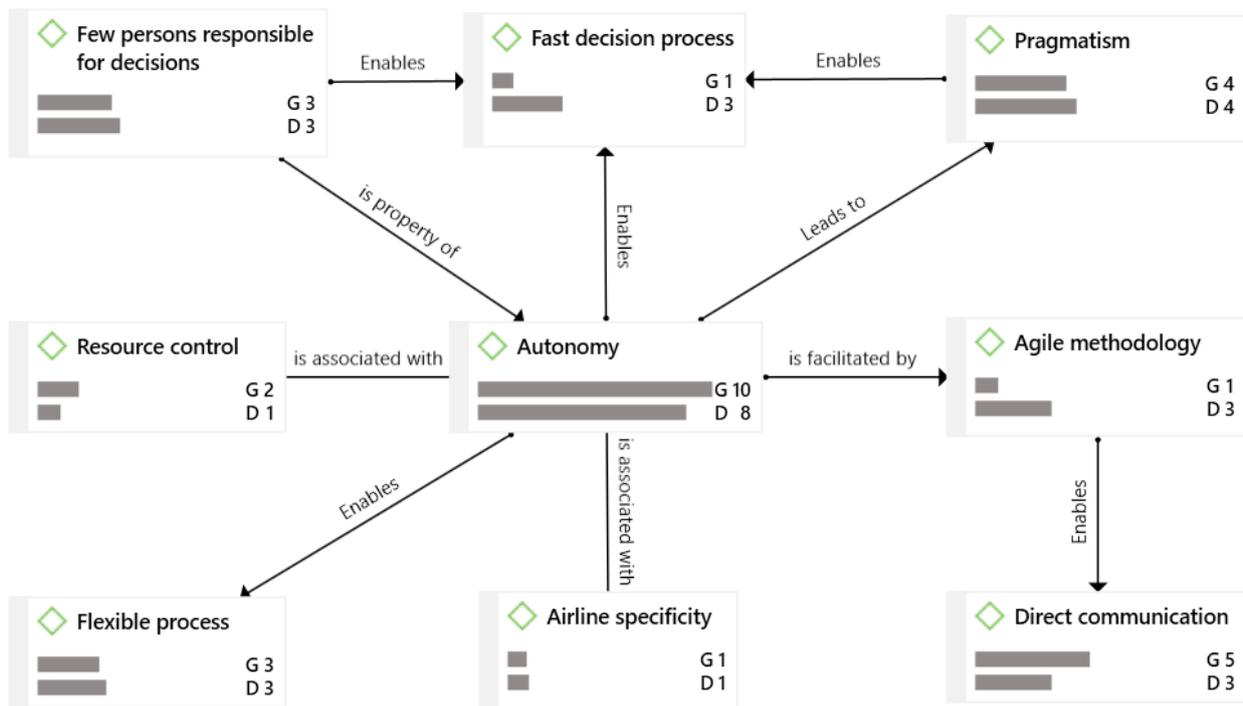

Figure 9. Autonomy network view

Transparency

Important for the establishment of a strategic partnership was a fully *transparent attitude* from both parties, as displayed in Figure 10.

Transparency is the key point. There is a very good fit with KLM, because they like our product and they want to build a partnership with us. Having brainstorming sessions with the KLM team, they can help us very much in understanding what big issues are. (DG-1)

This state of *openness* and *trust* has been achieved by constantly investing in *one-to-one relations* through F2F and on-site meetings and by opening up and giving *full access to internal resources*. In addition, a young and enthusiastic management from both sides led to a very good *cultural fit*.

They invested heavily as well to come to NL, speak with agents, diving into Saleforce, getting to know the company and our business process. (AFKL-2)

Culture wise there was a good fit. Social media department is a bunch of young, enthusiastic, professional and hardworking people, and so are they. (AFKL-2)

At the same time, the definition of a clear and shared *roadmap* and the high *resource commitment* from both parties naturally led to the creation of a *strategic partnership* based on trust and transparency rather than on contractual agreements.
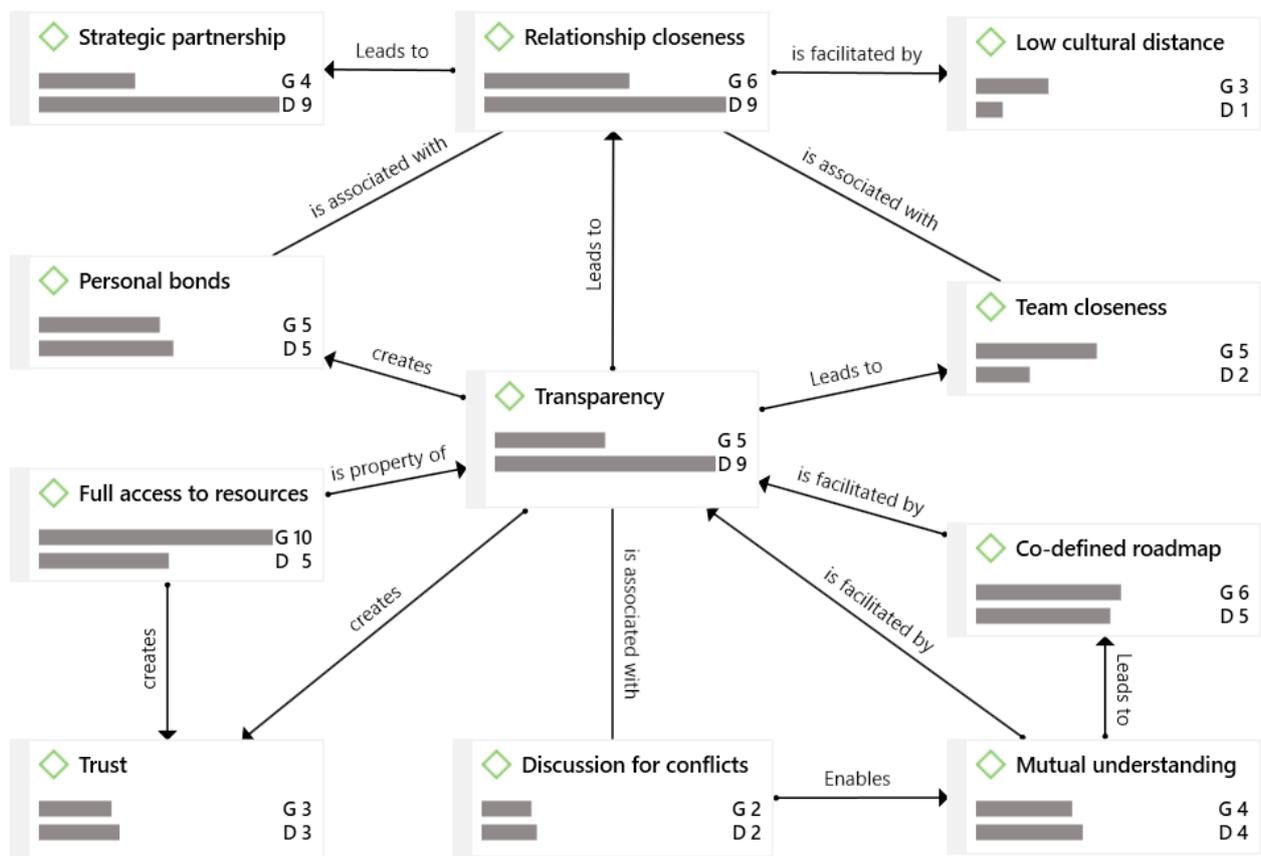

Figure 10. Transparency network view

4.2 Tata Consultancy Company (TCS) Case

4.2.1 Introduction

The innovation project under study started in 2013 and concerns the development of an APIs' infrastructure to support the creation and opening up of AFKL's APIs, with the goal of reaching out more customers by taking advantage of multiple channels and personalized offerings. For this reason, APIs has been indicated as a core technology to keep up with the competition and a critical element in AFKL's long-term strategy. Moreover, API technology is nowadays one of the building block of the digital economy and is considered fundamental by enterprises that want to create new marketing strategies, have new revenues streams or enable external parties to build applications on top of their services, such as airline companies.

This case has been selected to analyse how AFKL has successfully carried out the collaboration with the IT organization Tata Consultancy Company (TCS), as well as to empathize the best practises of inter-firm, highly complex and innovative collaborations.

Tata Consultancy Services is an Indian multinational firm offering a wide range of services in the fields of IT, business consulting and engineering. It is part of the India's largest industrial conglomerate, Tata Group, and employs over 380,000 consultants worldwide. Due to the high technical capabilities that TCS possess in various areas of IT and the deep knowledge of the airline service sector, AFKL has relied on their outsourcing services for over 20 years. Specifically, TCS support AFKL in building and maintaining internal IT applications by providing manpower and technical knowledge. In addition, AFKL relies on an off-shore TCS team located in India, whose role is to support the on-site teams with additional specific technical knowledge and manpower.

The interviewees

In total, four interviews have been carried out to collect the information on this case. The interviewees are displayed in Table 7. These figures have been selected for their extensive knowledge of the case under study, as well as for their responsibilities both in the strategy definition and solution delivery of the project. In particular, the AFKL interviewees were chosen to provide insights from both the IT and Business perspectives.

Code	Company	Role	Responsibility
AFKL-1	AFKL	Group Manager CDCC CIO/IS	Responsible for the delivery of software for the Business domain
AFKL-2	AFKL	Group Manager Organizer of E-Commerce	Responsible for the delivery of APIs from the IT to the Business domain
AFKL-3	AFKL	Product owner IMO office	Responsible for the global progress of the APIs programme in the Business domain
TCS-1	TCS	Engagement Manager	Responsible for the overall development of TCS-AFKL relationship and for the solution and delivery of the APIs programme

Table 7. Interviewees

Background

Based on the narrative of the case, Figure 11 displays the different phases that have characterized the creation and opening of AFKL's APIs, in collaboration with TCS.
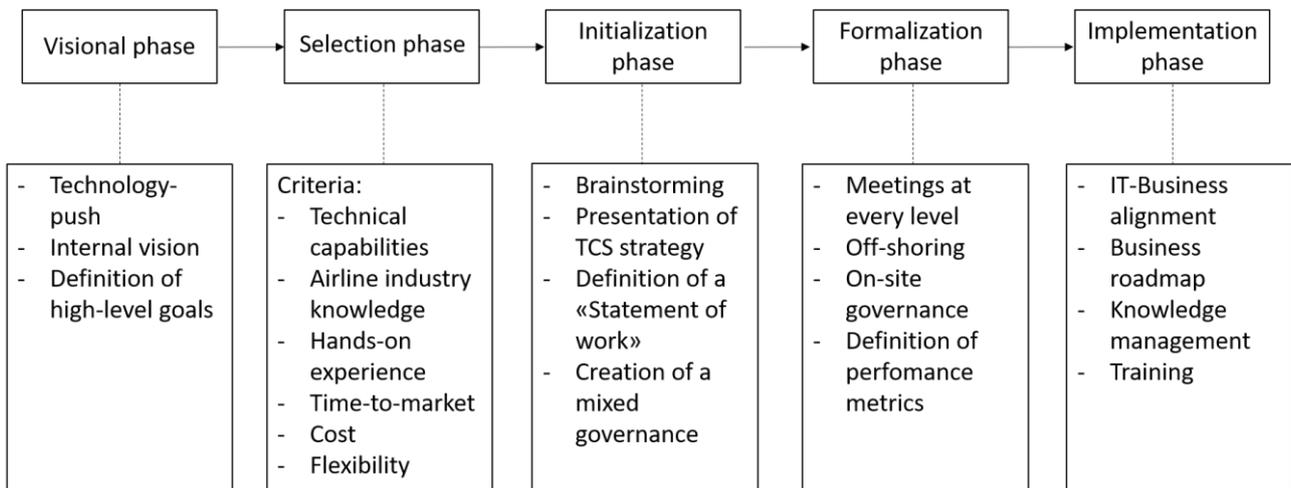
Figure 11. Partnership formation process

The API project started with the definition of two main, high-level strategic objectives by the AFKL management: (i) reach out more customer through personalized offerings, while (ii) being faster than the competitors. Such vision resulted in the creation of an internal AFKL strategy document as to identify those resources necessary to start the development of the API infrastructure.

To do so, AFKL decided to work in collaboration with the consultancy firm Accenture. However, since the initial phase had been characterized by several delays due to a lack of technical capabilities, it was decided to switch and rely on the services of TCS for the APIs creation and opening. Specifically, the AFKL management realized that the complexity of this project would have required deep technical and airline industry knowledge and hands-on experience for a successful development, which was lacking at that moment

> *We first worked with Accenture, more infrastructure related. After that phase, we were no happy with their skills. We were looking for real hands-on experience. This is why we went to TCS. We were already working with TCS and this helped to set up this new project. (AFKL-2)*

> *We looked into cost, time-to-market, flexibility, migration scenario, when choosing TCS. (AFKL-1)*

The collaboration with TCS started with a formal meeting between the two management, where TCS shared their vision and had the chance to discuss with AFKL about potential development strategies. At that time no formal agreements have been written down, neither any API-specific document signed. An important element that emerged from this meeting was the willingness of the two companies to work together as real partners, by sharing vision, strategies and goals, rather than just defining requirements and contractual agreements.

> *We were focusing on building a partnership rather than on SLA-based contractual agreements. (AFKL-1)*

> *Until we started implementing nothing was written down. From our side, until we see it is working we do not even talk about formal agreement. (TCS-1)*

From a contractual perspective, the only formal agreement defined was a Statement of Work built on top of a Master Contract, where there were listed the set of specific skills required for this project. The Master Contract is a formal partnership agreement that has been in place for several years and represents the basis to manage the different AFKL-TCS collaboration projects. Here, the general terms on partnership level are described.

> *We (AFKL) don't have a special contract for this collaboration with TCS. We had already a contract with TCS about the skills we can hire and the terms. We have here the TCS account manager who manages the relationship with KLM. We talked with him about our idea and we assessed if within the current contract we were able to hire the right people with the right skills for APIs. We have been working for a long time with TCS, which is why we did not have an additional contract. (AFKL-2)*

36

We (TCS) were pretty much flexible with the contract. KLM as a partner has always trusted TCS on its solutions. So we were not really focused on real contractual agreements, but of course we work on a formal platform and there is also a master service agreement between us. (TCS-1)

At the same time, AFKL decided to set up a mixed AFKL-TCS governance team to define the rules and design a common APIs strategy. This choice allowed to align the two companies and build a joint strategic planning. Moreover, AFKL had the opportunity to take advantage of TCS' industry knowledge by directly involving them in the strategy definition.

Part of TCS people are in the architecture governance team of AFKL. Initially TCS gave consultancy on how to strategize APIs to AFKL. We (TCS) gave a strategy on what are the phases to open up the APIs, which was represented by a kind of roadmap. We presented that to the joint CIO office in Paris. After that the design of APIs started. Then we formed the teams with functional experts from both companies. We first defined from a structural point of view how the team should run. (TCS-1)

During that period, AFKL was transitioning from the classic waterfall project management approach to the Agile way of working. Such transition resulted into various obstacles in the APIs project, due to the lack of experience that TCS developers had in working in Agile product teams, especially the off-shore teams.

We (AFKL) started working on agile product teams. We experienced that TCS experience on agile methodology, especially offshore, was not great at that moment. We had some problems there to get the people up to speed. We made product team for APIs. We discovered that TCS at that time was not very mature in that sense. They used a waterfall model. (AFKL-2)

Not only different working methodologies but also cultural differences initially slowed down the project. Specifically, Indian and Dutch cultures differ on various aspects, such as directness of communication, language, and problem-solving attitude.

The second problem is speaking out from a cultural side. They (TCS) are very hierarchical, like French. Dutch are very straight. Generally, Dutch guys take the lead while working with TCS employees. Problems sometimes are discovered later because are referred by senior TCS developers, rather than by the TCS developers themselves. (AFKL-1)

What really helped was overcoming the cultural differences. From the Indian cultural, directness of communication is a problem. In some situations, to really understand what was going on, I really pushed them to speak up. Even though at the beginning it was difficult, at the end it really worked. (AFKL-2)

In order to overcome such differences and create a transparent and collaborative atmosphere, the two companies heavily invested in training, formal and informal meetings on different levels and on-site visits. This also allowed to bring the partnership to a more formal level and be acknowledged throughout the companies.

They (TCS) also sent an agile coach, as to bring back to India the knowledge and train the people. We also had their offshore team over here for a week, to get a better bonding with the KLM team. We also met the product owner from their business. We had different ceremonies that helped the communications. We did some team events, workshops that improved the relationship. (AFKL-2)

The actual structure of today grew along the way. We had a big migration path where we had regular meetings with them on different levels. We increased the amount of visits on different managerial levels […] now also higher management levels (CIOs) are visiting each other. It gave the impression to be a more official and formal partnership. (AFKL-1)

The transition to the Agile methodology had a critical impact on the implementation phase, since it allowed to improve teams' coordination and speed up the decision-making process. In fact, prior such transition all the decisions were under the responsibility of the IT domain, preventing the Business domain from have a formal and direct connection with TCS associates. Mixed product teams enabled to skip the various management layers by establishing direct communication between the team members from different domains, as well as to achieve a better IT-Business alignment.

[…] Now in an agile mode you communicate this during the sprint review. Before all the management interactions and decisions were responsibility of IT. As IMO I give insights and information to the coordinating management of TCS. Usually, the official requests go through Berrie. However, thanks to Agile, now we talk directly to TCS. We no longer need Berrie if the people are within the team. This really helped coordination and speeded up the project. (AFKL-3)

The project is still ongoing and the management of both companies is particularly satisfied by the progress that have been made during these 5 years, despite initial delays cause by AFKL's internal misalignments. Until now, AFKL have created and opened up 30 APIs, which are currently used in mobile apps and are in line with the business targets.

4.2.2 Findings

This section presents the key elements mentioned during the interviews. The table below is organized in accordance with the theoretical framework proposed in section 2.4.4.

Dimension	Sub-dimension	Key points
Contractual	Objectives	- Informal agreement on strategic objectives - Common vision - Co-defined roadmap - Long-term orientation
	Incentives	- Non-monetary benefits (i.e., Schiphol pass)
	Completeness	- Statement of Work built on top of a Master Contract - No specification of deliverables - High-level performance measurement
Social	Alignment	- High cultural distance - High commitment - Importance of mutual understanding
	Attitude	- High trust - Focus on conflict resolution - High transparency - Good interpersonal relationships at management level
	Exchange	- Importance of knowledge sharing and skill transfer - Importance of knowledge retention
Organizational	Interactions	- Frequent communication at every level - Regular alignment meetings - Direct communication between teams - Coordination as a challenge
	Planning	- Flexible planning based on one-year roadmap - High team mobility
	Structures	- Mixed governance - High senior management support - Clear roles and responsibilities - Diverse working methodology

Table 8. Key findings

4.2.3 The three dimensions

The following sections summarize the most important and cited elements of the three dimensions of this collaboration.

4.2.3.1 The contractual dimension

While addressing the contractual dimension, the interviewees highlighted the importance of informal agreements at management, rather than formal contracts.

They (TCS) gave us a formal presentation and we talked about it, but we did not sign a document together. It was more an informal agreement, not written down. We had our idea on APIs, and then we started interchanging our ideas. They gave us their vision as well. And actually we were very in line with them. (AFKL-2)

The only API-specific document was a Statement of Work listing the resources needed for the project. This element highlights the marginal role that written agreements had in this specific collaboration.

On the other hand, a large size contract with a single large vendor represented an important driver to achieve internal flexibility and guarantee great technical skills in the project.

What did also helps in this collaboration with TCS is that you must be of a reasonable size to get more skilled people from TCS. This happened also because we got on board more TCS associates for this project. Therefore, the KLM account within TCS is now more important. We get priority within TCS. The size is also important. (AFKL-2)

[...] On the contrary, KLM works with only one company [...] The benefits of KLM way of working is that when you miss the resources it is easier to find a replacement. When your team is composed by people from different companies and you need to change something very quickly in the team, it can happen that the process has some delays [...] the flexibility to move people, to add people, to change people, is certainly an advantage. If you work with the same company, it is way easier [...] (AFKL-3)

Among the different topics of discussion, the most important elements mentioned within the contractual dimension were:

- Collaboration mainly based on informal agreements
- Definition of clear high-level goals beforehand
- Definition of a clear vision beforehand
- Importance of strategic discussions beforehand
- Definition of a roadmap as guideline for strategic direction
- Master contract as guideline for contractual agreements

4.2.3.2 Social dimension

Within the social dimension, the two companies were highly committed to build a partnership based on trust and enhanced by continuous formal and informal interactions and one-to-one personal relations on management level.

I want to emphasize the importance of investing in one-to-one relationships and with the management. Discuss every item in openness and transparency. Trust and give-and-take is quite a simple concept but very important in vendor relationships. Everything starts with trust, without being stupid of course. (AFKL-2)

Important to note is that such state of trust was the result of several years of successful collaborations. Furthermore, various efforts to reach cultural alignment, a constructive and transparent attitude and commitment to knowledge sharing and retention represented additional drivers to promote this collaboration.

Among the different topics of discussion, the most important elements mentioned within the social dimension were:

- Creation of a fully transparent and collaborative atmosphere
- Continuous efforts to reduce cultural gaps
- Importance of personal relationship at managerial level
- Importance of knowledge sharing and retention
- Importance of problem-solving

4.2.3.3 Organizational dimension

From an organizational perspective, the two organizations highly invested in the alignment of working methodologies and onshore/offshore teams, as well as in a governance structure with clear roles and responsibilities, as to achieve high coordination.

> *[...] The main challenge was to get them working in the agile model. In addition, here we have mixed teams. It was important to bring the maturity of TCS people to the right level. Third, working together from different locations [...] especially for the offshore teams. It was important to integrate them. (AFKL-2)*

> *A second challenge we faced was getting all the people working in a certain process. At the same time we were trying to transform to agile methodology. It was also a transformation on the different models TCS used to work, from a fixed priced model to agile. (TCS-1)*

> *The responsibilities and the decision making are properly split between IT and business, depending on the content of the decisions [...] when we take decisions we meet altogether and we involve also TCS people, due also to the agile mode. (AFKL-3)*

This process was supported by constant communication and meetings at different levels of the organizations.

Among the different topics of discussion, the most important elements mentioned within the organizational dimension were:

- Mixed governance
- Constant communication on different levels
- Direct and quick communication between teams
- Coordination enhanced by Agile methodology
- Different working methodologies as a barrier
- High team mobility
- Importance of training and on-site managers

4.2.4 Conceptual analysis

By analysing the project under three different perspectives, it is now possible to compare their explanatory power in relation to the dependent variable (e.g., Company alignment) of the conceptual model described in section 1.4, as well as to assess their overall influence on the outcome of the collaboration. Table 9 provides an overview of the findings.

		Company alignment
	Contractual	0
Conditions	Social	+
	Organizational	+ +

Table 9. Summary table

Concluding from the previous sections, the *contractual dimension* did not represent the main driver for the success of this collaboration. Specifically, the only contractual agreement (e.g., Statement of Work) has been formulated on top of a Master Contract and has been formalized only after the beginning of the project. Moreover, the strategic objectives and scope of the collaboration have never been written down as contractual agreements but only informally agreed. This suggests that, in line with the previous case, formal control mechanisms played a role only at later stages of the API project, as the client firm primarily relied on informal mechanisms of control and relational governance during the initial phases of the collaboration.

The *social dimension* played a more important role and enabled the two organizations to enhance the closeness of the relationship and to informally agree on high-level objectives and on a simple contract. In this regard, the two parties have committed many resources to create a social context based on trust, openness and mutual respect and where the relationship could have flourished. Such collaborative atmosphere resulted by dealing and bridging the cultural gap and by investing in people's training, motivation and team spirit. In line with the

previous case, trustful business relations based on a long lasting collaboration allowed the two companies to immediately move from contractual negotiations to the pragmatic side of the project. This provides additional evidence of how formal governance based on contract clauses can be substituted by relation governance during the first phase of IT innovation projects and of the intertwine between social and contractual dimensions.

Finally, the analysis of the *organizational dimension* suggests that a structured and mixed governance had a fundamental impact in the success of the collaboration. It allowed the two organizations to achieve high coordination and align projects' focus and teams' efforts. Moreover, clear responsibilities and well-defined roles ensured flexibility and pragmatism in the decision-making process and highlight the importance of a proper and dedicated management structure. Finally, management challenges such as off-shoring and misalignments in skills and working methodologies have been immediately addressed and overcome through training and dedicated managerial figures. In this regard, it can be argued that an effective organizational management facilitated not only the overall performance of the collaboration, but it also strengthened the social capital at every level of the organization. Therefore, also in this case, the analysis of the interviewees' responses suggests a link between organizational and social dimensions.

4.2.5 Reflection

This section goes deeper into the factors and elements that have been identified as more relevant during the analysis of the interviewees' answers and the coding procedure, as part of the overall analysis.

Specifically, three main elements have been identified as key for the success of this collaboration: (i) collaborating with a single, large, capable and trustful vendor; (ii) focusing on building a partnership rather than an outsourcing agreement; (iii) moving from a waterfall project management approach to the Agile methodology as to improve companies and people alignment and rapidly achieve high coordination and tangible results. These three main elements are explained and illustrated in the figures in the remaining chapters.

A single and large vendor

Figure 12 displays the different elements that make vendor selection a critical choice while initiating innovation-oriented and highly complex collaborations where firms' *core technologies* are developed. In the case under study, TCS has been chosen because their *technical and hands-on experience* on APIs, as well as for their *airline industry knowledge.*

> *The strong point of this relationship when it comes to innovation is that they (TCS) are a 300,000 people organization. They have a huge amount of other clients, also within the airline industry. From a technological point of view they have a great internal technical knowledge about API and IoT. If anything is going on, they have investigated it. Secondly, since they have a lot of airline customers, they also know what the other airlines are working on. In this sense they suggest us to look in particular directions. (AFKL-1)*

Another reason why the choice has fallen on TCS is the *long-lasting* and *trustful relationship* that has been built throughout the years. Such atmosphere based on personal relations at management level and mutual trust and respect has represented the basis for this project and for contractual agreements. The choice to rely on a *single and large vendor* and to get on board a *large number of TCS associates* led AFKL to increase their account within TCS. As a result, TCS is now supplying the most experienced and skilled consultants to AFKL, due to the high dependency created between the two organizations. Getting on board experienced people has increased the knowledge sharing within AFKL, but at the same time has posed the problem of its retention, due to the high mobility of TCS consultants. In order to tackle this, the two companies have agreed on a fixed capacity of TCS associates working in AFKL.

> *[…] The third challenge was about scaling up the people. In the initial people we (TCS) wanted to have the work done so we needed to scale up people. However, we did not know if after having met the first target we would have needed the same number of people or not. If you let people go, you lose knowledge. We then defined a strategy to have a fixed capacity. We created tracks where we could distribute our fixed capacity within KLM. (TCS-1)*

This choice turned out to be a very effective solution also at company level, since it is now possible to take advantage from TCS capabilities by moving them between different projects and thus increasing the *overall flexibility*.
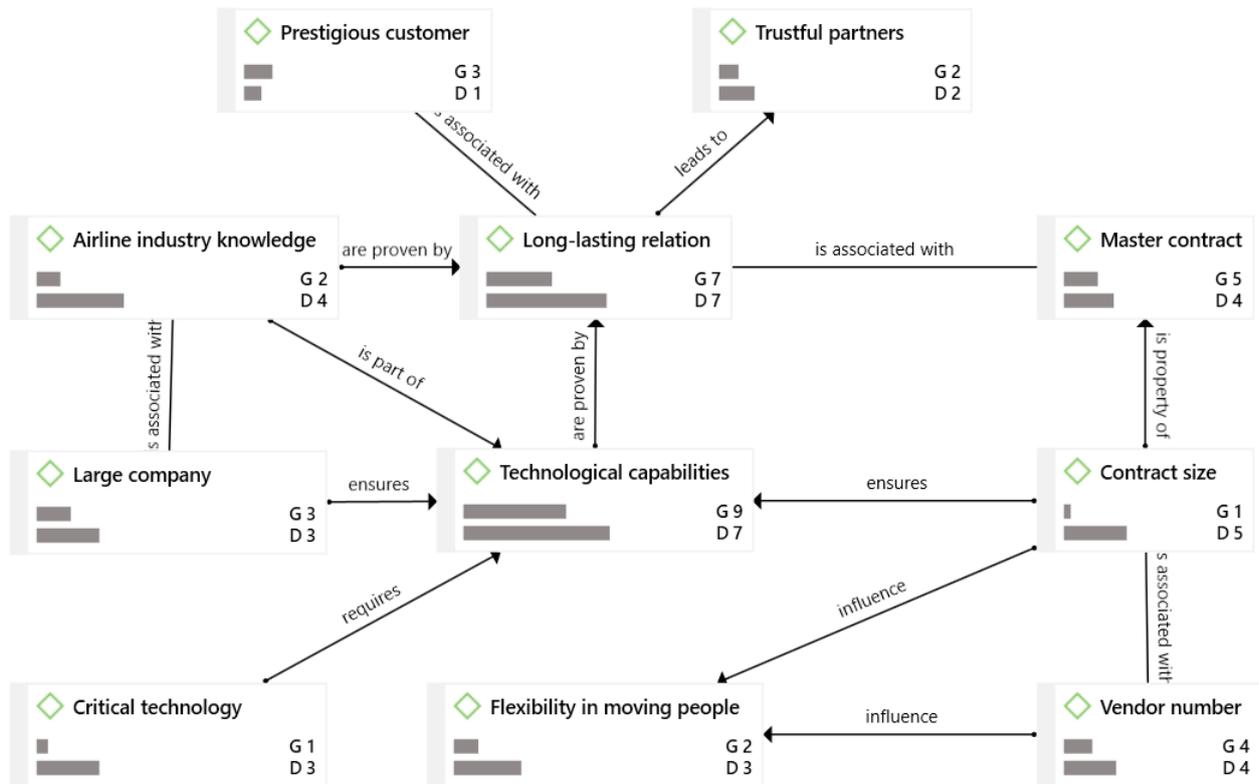

Figure 12. Vendor network view

Transition to Agile methodology

The development of APIs has been deeply influenced by the transition from the Waterfall to the *Agile approach*. All the interviewees have highlighted the central role of the new working methodology in the collaboration with TCS and how this transition boosted the project, as well as created impediments. Specifically, as displayed in Figure 13, Agile has generated several benefits in terms of *engagement*, *flexibility*, *communication* and *knowledge transfer*. Directly involving the different stakeholders before, during and after the Sprint reviews allowed to align expectations, prevent and quickly deal with unexpected problems and build trust and team spirit.

> *Agile methodology creates the team mood and give motivation. It is also important to be clear on the objectives, on the lack of knowledge or people. (AFKL-3)*

> *[…]Now there is more travelling on every level for knowledge transfer. This also makes the communication more direct and easier, thanks to the new agile way of working. (AFKL-1)*

At the same time, it gave product teams high flexibility in the prioritization of the overall product backlog and periodical opportunity to introduce changes. Agile turned out to be extremely important also to achieve coordination between IT and Business domains, as it enabled fast decisions through direct communication. Finally, it provided a way to achieve early and predictable results based on business value. However, the transition to Agile has posed various management challenges as well. First of all, intensive and constant *training* has been necessary to align the ways the two companies operate.

> *We now have an official AFKL position in India as sort of site manager to manage that side of the ocean, to make sure that problems from our side are handled there in a more constructive way. To set*

up a better governance to improve the way of working over there. We want to improve and professionalize the working relationship by sending somebody over there. There are a lot of TCS people over here, including several management layers. (AFKL-1)

Second, working with *mixed teams* highlighted the gap exists between Dutch and Indian cultures.

[...]What really helped was overcoming the cultural differences [...] (AFKL-2)

Culture was an aspect of our relationship [...] we faced this cultural differences by getting to know each other and by working together. We started to build up a very trustful relationship with TCS management. (AFKL-2)

Third, several efforts have been done in order to effectively tackle all the communication problems and knowledge gaps, as Agile is not recommended when working in off-shoring. For instance, *reliable communication tooling* and *proper scheduling* represented preconditions to create and effectively manage "*virtual teams*".

[...] This can be done thanks to reliable tooling and good scheduling. It seems obvious when it is there, but at the start when it is not there you look for a good sounds for several weeks before a solution is defined. It takes time to put everything in place. It is important to have a good scheduling and to have everyone in the same room, even if it is a virtual room. (AFKL-3)
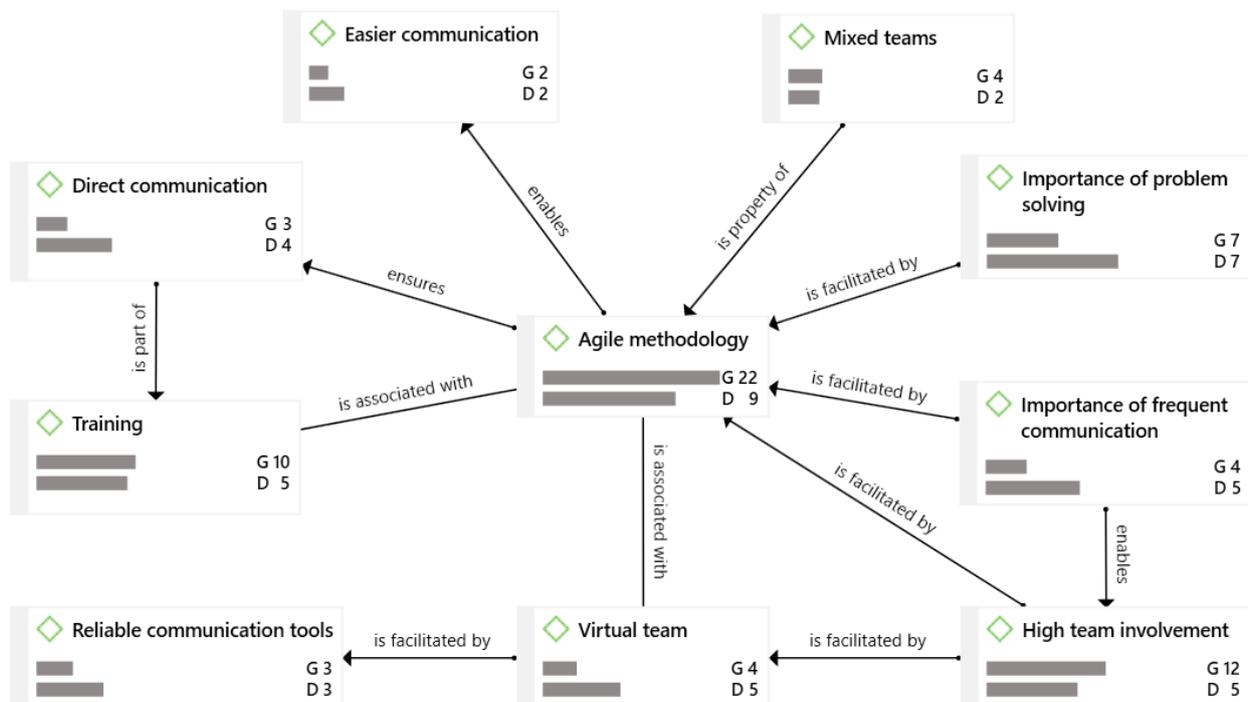
Figure 13. Agile methodology network view

Focus on relationship building

Figure X displays the elements associated with relationship building process between AFKL and TCS. Critical for the successful development of APIs was the effort made by both firms to *build a real partnership* since the beginning of the project. *Mutual trust* and respect have been established through periodic *formal and informal meetings* between the management, as well as at team level. Informal ceremonies such as team events, team dinners and on-site visits allowed people to forge *personal bonds*, as well as to overcome *cultural differences* and build trust.

Sometimes it happened we had team events, team dinners, visits in the weekends, visits between India and NL. Recently we (TCS) have started frequent visits of KLM colleagues to India. They stay there for a week and we organize events for them over there. We make sure there are events outside the

office, where you go and play. This is how you get closer, because when you are closer you really work together on the same goals. (TCS-1)

Meetings at *different levels and frequent communication* allowed also to align expectations and goals and discuss problems in a transparent and constructive manner.

At the management level, we share global trends, strategies. We (AFKL) always try to bring people form the business with us, so that they can share business vision and strategy. So that people in the team and from TCS understand where we are going. (AFKL-1)

The figure of *TCS relationship manager* was another element that played a role in this collaboration, since it was responsible not only for the solution and delivery of the APIs programme, but also for the overall development of TCS-AFKL relationship.
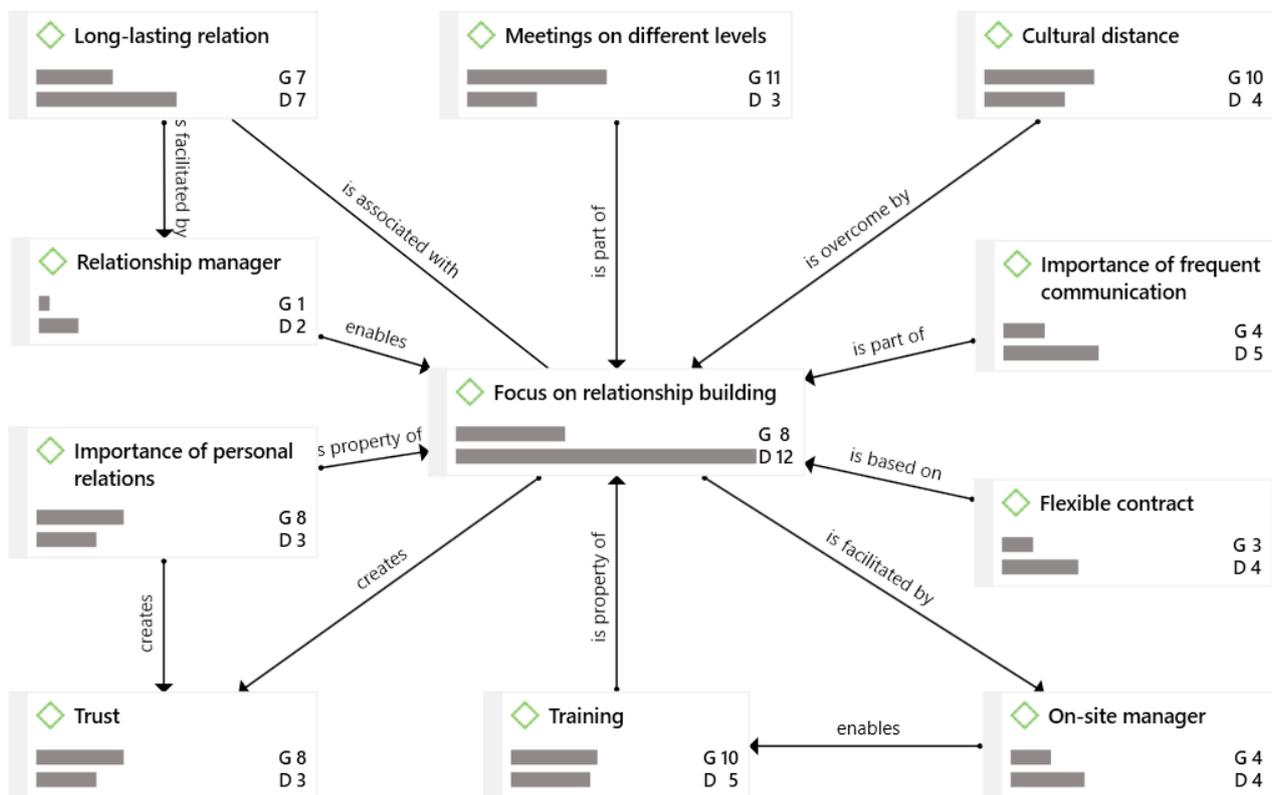

Figure 14. Relationship building network view

44

4.3 Microsoft Case

4.3.1 Introduction

The collaboration under study started in 2015 and concerns the experimentation of various Microsoft's technologies in AFKL's ground services context. The goal of AFKL was to create an open environment to test all different kinds of Microsoft's breakthrough technologies and assess the possibility to establish a long-term strategic partnership as a starting point to revolutionize the airline industry. The technological potential of Microsoft together with AFKL's open testing environment highlight the importance of this innovation partnership, due to the endless technological applications and business opportunities it could originate. This collaboration started with the application of Internet of Things (IoT) technology in a ground services' project called APRON. Eventually, the interest of both companies dropped, as well as the potential Proof of Concepts (PoC), and the strategic partnership never materialized.

This case has been selected to identify those elements that impeded the collaboration to flourish, as well as to assess the contrasting reasons brought forward by the parties involved.

Microsoft is an American multinational technology company that develops, licences, implements and maintains computer software and hardware, among others. Active in 170 countries with over 110,000 employees, this technology giant is one of the most powerful corporates worldwide and represents one of the monarchs of technological and business innovation. Despite their potential technological capabilities, Microsoft-AFKL relation has always been limited to software licenses and has never taken place in an innovation context.

Due to the difficulties encountered by the researcher in following the interview protocol for this particular collaboration, the analysis of the Microsoft case did not followed the strict coding procedure as in the previous cases. The choice was due to the need to reconstruct the narrative from any interviewees' perspective, as well as by difficulties encountered in steering the interviews. Therefore, in order to carry out in more valuable analysis, the next sections try to draw a complete picture of the different interviewees' perspectives. By reconstructing the narrative of the case and by analysing the contrasting views and conflicting statements of the interviewees, a set of conclusions is drawn.

The interviewees

In total, three interviews have been carried out to collect the information on this case. The interviewees are displayed in Table 10. These figures have been selected in order to collect information from different point of views (e.g., AFKL's CIO Office and Innovation Lab, Microsoft) with the goal of building a complete narrative and having a multi-perspective picture on this collaboration. In particular, the interview with Microsoft has been carried out with two persons simultaneously who provided complementary insights on the narrative of the story.

Code	Company	Role	Responsibility
AFKL-1	AFKL - IT	SVP Group Strategy and Tech Office	Responsible for the strategy definition and technology portfolio
AFKL-2	AFKL – Innovation Lab	Project Manager IT Innovation	Responsible for identification and initial testing of new technologies
MIC-1	Microsoft	Enterprise Architect	Responsible for software implementation and support
MIC-2	Microsoft	Account Executive	Responsible for the design, execution and management of contractual agreements

Table 10. Interviewees

Background

The collaboration was triggered by an executive tour at Seattle Microsoft's offices in 2015. On that occasion, Microsoft and AFKL found a common interest in exploring the possibility of a strategic innovation partnership: the first would have offered their most advanced technologies, while the latter would have provided a completely free environment for testing to come up with new applications in the airline context. The two companies had the chance to share their vision and define a common direction during another few F2F meetings, where it was informally agreed to begin the collaboration with a relatively low-tech pilot based on IoT technology. After that, Microsoft would have brought more technologies into the collaboration by giving access to their research division. Important to note is that while the initial contact between the two organizations happened between units responsible for innovation activities (e.g., Microsoft' Product Groups (PG) and AFKL's Innovation Lab), the partnership responsibility on Microsoft side was eventually transferred to the Service Group (SG), the unit in charge of the implementation and support of IT services.

The following year, after an initial promising phase of testing, the two companies decided to set up a PoC within the APRON project: the idea was to apply IoT sensor technology to luggage karts in order to streamline and make more efficient the transportation process. Microsoft invested in the engineering and development cost and connected AFKL to their cloud, while AFKL set up the pilot in the Ground Services division. In parallel, the two companies agreed on broadening the scope of the partnership by exploring the applicability of other technologies. During this period (3-4 months), the relationship has been mainly based on informal agreements and characterized by an informal way of working with direct contact between engineers and low involvement of Microsoft's VP level.

The outcome of the PoC was controversial: on the one hand Microsoft believed that it represented the perfect opportunity to formalize the partnership through a contractual and financial agreement; on the contrary, AFKL considered the business case too weak and in a too early stage to start investing from a financial point of view. In addition, tension and mistrust between the two parts started to arise due to divergent goals: Microsoft was insistently looking for financial commitment and for a direct connection with the AFKL Business Units VPs; AFKL was asking for different and more advanced technologies to come up with new business cases. Furthermore, AFKL was expecting to successfully complete 3 PoCs before bringing the partnership to a formal and contractual level.

Eventually, the partnership moved to a more formal level through a Memorandum of Understanding (MoU), a non-binding contract describing the high-level objectives of the partnership and representing a proof of the VP level commitment to work towards a strategic partnership.

After several another alignment meetings, both sides decided to terminate the collaboration prematurely. Microsoft claimed that at that moment there was no real value in the partnership and were not willing to further invest in it. Specifically, the slowness of AFKL internal processes and the lack of commitment and financial guarantees were the main elements mentioned as cause of this choice. On the other hand, AFKL lost motivation and interest due to constant divergent goals and the absence of the right business cases.

At the moment, the two companies are still collaborating on other projects by sharing technologies and exchanging information. However, a real innovation and strategic partnership has never taken off.

4.3.2 Analysis

This section presents the key points drawn from the narrative of the case and interviewees' statements. By analysing the case from different interviewees' perspectives, contrasting views have emerged. These are the result of the misalignments existing between the two companies in all dimensions of the relationship.

4.3.2.1 Contractual dimension

From a contractual perspective, the two organizations displayed completely different views. While Microsoft SG believed that formal contractual agreements represent the starting point of long-term partnerships, AFKL was not willing to sign any formal document before assessing the real potential value of the collaboration. Financial commitment and financial guarantees were pre-conditions of Microsoft collaboration model, which required the relationship to move to a more formal level. On the contrary, AFKL management considered

contractual agreements necessary only further in the innovation process, which they consider more informal, test-driven and triggered first by the willingness to size the right opportunities.

> *I believe there is a model where you simply explore and when you find something, that is the moment when you are going to talk about money. (AFKL-1)*

> *Usually with PoC we shared the cost and ownership of the results. KLM did not have any money at that time. (MIC-1)*

Initially, the collaboration begun in a very informal way and was triggered by common interests and shared vision. In a second moment, the respective expectations started to diverge. In particular, from the interviews it results that the scope of the collaboration has never really properly discussed and defined, neither its long-term strategic objectives.

> *Every time we were moving towards a certain direction and we had one alignment meetings, the path completely changed after the meeting. There was no a common strategy. (AFKL-2)*

Moreover, the two parties never managed to find an agreement on how to manage the innovation process, neither on its requirements. This is reflected on the degree of formality of the companies' processes: while Microsoft SG structure required to go through a formal process to have access to resources for setting up PoCs, AFKL Innovation Team used to step into formal financial requirements only later in the development process.

> *We created a sort of innovation process where you start talking about money only you manage to trigger the interest of the business. In my opinion we were still in the previous phase, since the IoT platform had not been delivered yet at that point. (AFKL-2)*

Such divergences led Microsoft SG to ask for a shared MoU, whose purpose was to prove and cast in stone the firms' commitment. However, it eventually turned out to be of no real value.

> *One of the condition to get this money from the HQ for the PoC was a MoU signed by both parties. A non-binding agreement, but it is something that proves that the leadership want to work together on innovation. (MIC-1)*

> *I ended up signing a kind of MoU because they need a signature to forward the requests in their process. I am willing to sign it something for their process, but you don't get any commitment from me. (AFKL-1)*

4.3.2.2 Organizational dimension

From an organizational dimension, the lack of connection between the companies' VP levels was one of the reasons that led to a gradual deterioration of the relationship. This also caused a discrepancy between the strategic directions of the collaboration and day-to-day operations.

> *At Seattle, I had a very good click with the VPO from transport industry. He showed them their products and I showed my vision [...] We had a good understanding, common directions. On the day to day work, it seemed they only wanted to sell licences. I was talking with the contract manager. (AFKL-2)*

Another reason behind these problematics can be found in the lack of common long-term planning. On Microsoft side, SG was struggling in finding financial and non-financial resources to invest in the collaboration. At the same time, AFKL was suffering from a lack of internal resources to move forward with the PoC within the APRON case. This deterioration was due to the different intra-firm collaboration models: while Microsoft was asking for an early engagement and direct contact with AFKL business units, AFKL used to first give the responsibility of innovation projects to the IT department, which represents the main intermediary between the external vendor and the internal business environment.

> *The partnership is towards Edwin Borst organization. However, we want a partnership at business level. (MIC-2)*

If I look outside AFKL, innovation really works where we have direct contact with the business units, rather than going through IT. IT should be a facilitator, provide a sponsorship to reach the business. (MIC-1)

I think it is an illusion to walk into the business and ask for their interests per se. They need an intermediate, a process or people like us to connect. (AFKL-1)

Finally, the fact that SG was the main point of contact with AFKL Innovation Team represented another key issue, due to the commercial-driven goals that characterize it. This also resulted in ambiguity in roles and responsibilities, which further hampered the collaboration.

We were not talking with the experimental lab, but with the commercial organization. A commercial organization is not able to experiment. I think one of the explanation is that we were not talking with the innovation people from their side. We were talking to highly commercialized institute. (AFKL-1)

The two companies were not working on the same level [...] We were talking to a contract guy, and not to an evangelist [...] We should also have been clearer on each other roles. (AFKL-2)

4.3.2.3 Social dimension

Within the social dimension, an initial positive and forward-looking environment eventually was replaced by mistrust and lack of transparency. These conditions created an environment that eventually led to a loss of motivation and commitment from both parties.

We generated a list of new possibilities to explore. Then it became quite. I think it meant they brought out their experimental technologies and they did not trust us that we were willing to pay at the end of the day. I was willing to pay only if it was successful. From them, it was first showing the money and then being successful. (AFKL-1)

The two companies were not working on the same level. At some point I had the feeling he was not trusting me or my position. (AFKL-2)

This climate of uncertainty was also due to contrasting expectations: on the one hand AFKL was doubting of the genuine interest of Microsoft to become innovation partners, due to their continuous requests of financial commitment, unclear resource commitment and focus on the commercial and formal aspects of the process.

I think the genuine interest of Microsoft was not to do the pilot but I define the size of the contract to be signed. Suddenly it became formal and more formal, but we were still in the pilot phase. Suddenly it became formal and more formal, but we were still in the pilot phase. My question is if Microsoft was really genuine to carry out 3-5 pilots we were looking for. (AFKL-1)

On the other hand, Microsoft was asking to move the conversation from a technology-level to a business-level by immediately involving the business side of the company. This situation progressively built tensions and mistrust between the two parties and eventually resulted in a loss of mutual interest.

Our way of working is too less formal for them. There was not a real connection with their people and real willingness to make this cooperation. (AFKL-1)

Another reason can be found in the fact that the long-lasting relationship between AFKL and Microsoft has always revolved around the purchase of licences and services, rather than innovation activities in the IT environment. Therefore, although the two companies believed in strong inter-firm relations, they had never had the chance to get to really know each other processes, cultures and people.

I have never worked with them in innovation. For me it was the first time I met them [...] From my understanding, we should have spent more time in understating where we come from and where we want to go. (AFKL-1)

4.3.3 Reflection

This collaboration has suffered from many impediments and several problematics. From the analysis of the case it can be concluded that main problem was the lack of time and efforts dedicated by the two organizations to discuss and understand each other's' goals and agree on the strategic objectives of the collaboration. Despite an initial common agreement and enthusiasm on the possibility to create a strategic partnership, the two firms ended up with completely opposite expectations: while Microsoft was asking AFKL to purchase licences as financial return of their investments and to move forward and validate the APRON case, AFKL refused to bring the relationship to a financial level due to a lack of concrete proofs of its value and lack of real interest in the technologies proposed by Microsoft. One of the reasons behind this misalignment can be identified in the lack of separation of the innovation activities from the regular commercial tracks of another outsourcing agreements. To investigate this, it is important to pinpoint the different points of contact that characterize the business between the two organizations. Generally, the relationship between Microsoft and AFKL can take three main forms, based on the kind of technologies or services exchanged by the two companies, as displayed in Table 11.

		Microsoft technology	
		Current	New
AFKL technology	Current	No innovation	-
	New	Innovation	Co-innovation

Table 11. Start-up network view

- No innovation: AFKL purchase existing Microsoft technologies to upgrade products or technologies already in use (i.e., software licences). On Microsoft' side, the main unit responsible for these activities is the License Sales Group (e.g., account manager, account technology strategy, product specialists).
- Innovation: existing Microsoft technologies are tested and implemented in the airline context with goal of creating new applications (i.e., IoT sensors to improve the efficiency of luggage karts transportation). On Microsoft' side, the main unit responsible for these activities is SG (e.g., enterprise architects, consultants, service delivery managers).
- Co-innovation: AFKL and Microsoft together develop and test the latest technologies, with the goal of creating breakthrough applications to disrupt the airline industry (i.e., Facial recognition to streamline the passenger authorization process). On Microsoft' side, the main units responsible for these activities are Product and Industry Groups.

From the analysis of the interviews, it appears that the two organizations were working towards a different kind of partnership: while AFKL was looking to truly disrupt the airline industry by developing new applications on top of the latest Microsoft technologies (Co-innovation), Microsoft was aiming at selling services and products already available on the market, as to improve the efficiency of AFKL processes (Innovation). Such misalignment eventually led to establish the wrong point of contact between the two organizations, Microsoft's SG, which is a commercial driven unit responsible for the implementation and support of current products and services and does not have a direct link and involvement with the latest innovation activities happening in Microsoft Product and Industry Groups. On the contrary, AFKL Innovation Team was expecting to become part of Microsoft's innovation network and thus have access to the latest technological advancements. Such contrasting goals eventually led to opposing attitude and ambiguous strategic directions that did not satisfy none of the parties involved. As a consequence, the innovation activities of AFKL got mixed with the commercial track of Microsoft and the expectations started to diverge.

In this regard, different collaboration approaches emerged. AFKL believed in building a partnership on open and free exchange of technologies and information, low formality of the processes, direct contact between Innovation Labs, no initial financial commitment, with the goal of creating a transparent environment where different business and technological opportunities could have been explored and assessed together. On the other hand, Microsoft SG identified in AFKL operational problems various opportunities to implement more mature technologies (e.g., IoT) and mutually benefit from the financial savings.

Another consequence of this misalignment was the different opinion on the best intra and inter-firm collaboration model to be adopted: AFKL believes in the role of the IT department as main intermediary between Microsoft and its business environment. This has been justified by the fact that operational domains such as Ground Services require a concrete range of ideas in order to get involved in innovation-oriented pilots. On the other hand, Microsoft believes in a model where representatives of the business environment are directly and immediately involved in the strategy discussion, as to spot the right business opportunities in a quicker manner.

Finally, the different understanding of the scope of the collaboration led the two organizations to adopt different approaches in regards to contractual agreements. AFKL required to avoid financial discussions until the completion of 3 business cases. They believed that contractual agreements represent a barrier when initiating breakthrough innovation projects, as they slow down the innovation activities by creating boundaries and arising contractual issues at first. Therefore, they were expecting that Microsoft would have autonomously arranged a budget on their side, as long as the right opportunities would have been spotted. On the other hand, the commercial nature of SG required them to go through a formal authorization process to have access to additional resources. Eventually, the two organizations ended up in completely opposite positions and ended the collaboration.

This case suggests that successful partnerships need to start from a clear understanding of the strategic goals, expectations and mode of collaboration. Since the beginning, it is fundamental to engage a discussion at VP level in order to ensure company and business alignment, as well as to guarantee the resources necessary to initiate the collaboration. In the case under study, such discussion has never taken place and the management of the two companies never met. This eventually resulted in lack of mutual understanding, diverse expectations, ambiguous strategic directions and disconnection between high-level and day-to-day operations. The initial promise of an open and transparent testing environment eventually turned into a commercial battle, where none of the parties was interested in each other proposal. The lack of time invested to get to know each other, adapt different cultures and build trust eventually resulted in scepticism from both parties. Moreover, new and highly complex collaborations benefits from starting from smaller and simple projects, as a way to assess each other's commitment, create a more transparent environment and align expectations and working methodologies. Finally, companies should make sure of having a clear understanding of each other's roles and organizational structures before entering a new projects, in order to ensure a faster and smoother decision making process and avoid misunderstandings.

4.3.4 Conceptual analysis

By analysing the project under three different perspectives, it is now possible to compare their explanatory power in relation to the dependent variable (e.g., Company alignment) of the conceptual model described in section 1.4, as well as to assess their overall influence on the outcome of the collaboration. Table 12 provides an overview of the findings.

		Company alignment
Conditions	Contractual	- -
	Social	+/-
	Organizational	-

Table 12. Summary table

From a *contractual dimension*, the two organizations did not manage to find a common agreement due to the opposite approaches adopted in innovation projects. The only formal arrangement signed was a MoU, with the goal of defining the high-level objectives and intentions of the collaboration. However, such agreement had the opposite effect: instead of steering the relation towards a common strategic direction and adding formal governance mechanisms to the collaboration, it gave rise to doubts on the genuine and mutual interests from both parties, and eventually represented a crucial point of conflict. These findings suggest that the initial phase of a relationship can be greatly threatened if a misalignment on the necessity of formal negotiations exists. In addition, a lack of shared strategic objectives and contrasting goals eventually led to hamper the positive working relations created during the initial phase of the collaboration.

Considering the *social dimension*, the initial promising and trustful relation eventually resulted in an environment characterized by mistrust and opacity. The reason of this deterioration can be identified in contrasting views on both contractual agreements and inter-firm collaboration model. In addition, the low transparency of the goals and processes of the two parties, a lack of contact at VP level and general dissatisfaction further contribute to deteriorate the social environment. This climate further weakened the alignment between of the firms, created ambiguous strategic directions and hampered the ability of the two companies to find both formal and informal agreements.

Finally, the *organizational dimension* also negative impacted the alignment of the two companies. Critical was the influence that a lack of shared partnership engagement model had on the overall inter-frim alignment. Furthermore, a lack of clarity in each other's roles and responsibility, a wrong point of contact between the organizations and a shortage of resources and management support eventually led the two organizations in a situation characterized by continuous misunderstandings and misalignments. Moreover, the fact that no strategic and operational planning had ever been defined and a low transparency and flexibility in processed further hampered the collaboration. This resulted in a loss of interests and motivation from both sides, which eventually brought the potential partnership to an end. This case provides evidence that a mismanagement from an organizational perspective can have repercussion to the social climate, as a consequence of unclear channels of communication and disagreement in a shared partnership engagement model.

4.4 Cross-case comparison

In the next sections, the results from the three study cases are analysed and compared to each other. Specifically, the analysis revolves around the explanatory power of each dimension on the dependent variable. Additionally, a reflection on how these dimensions are interrelated to each other is presented. The next sections present also an examination of the role of the moderating variables in the study cases by proposing case-specific explanations.

4.4.1 Cross-case analysis

Table 13 merges the findings of the cases analysed in the previous sections.

		Company alignment
DG case	Contractual	0
	Social	+ +
	Organizational	+
TCS case	Contractual	0
	Social	+
	Organizational	+ +
Microsoft case	Contractual	- -
	Social	+/-
	Organizational	-

Table 13. Cross-case summary table

As can be noted from the table, the *contractual dimension* only partially influenced the outcome of the collaboration. Looking at each specific case, in the DG case the contractual terms defined in the Innovation Contract represented only a way to formalize and the collaboration, as well as a mean to enhance and incentivize the relationship through new joint initiatives in various dimensions (i.e., Marketing and Public Relations). Important to note is also the definition and agreement on high-level business goals at contractual level, rather than the specification of technical functionalities to be delivered within a certain period of time. The findings from the case study suggests that IT innovation projects benefits from initial relational governance mechanisms, which only at later stages are complemented by more formal rules and procedures. In the TCS case contractual agreements played a rather marginal role, since the only formal contract signed by the two companies consisted in a Statement of Work, which was built on top of a Master contract already in place from past TCS-AFKL projects. Moreover, formal contractual negotiations took place only after the beginning of the API project and did not have a direct impact in the way the two companies decided to initiate it. On the

contrary, the initial phase relied primarily on outcome-based and behavioural control mechanisms. Opposite to the previous cases, discussions on the contractual level represent one of the main barriers in the Microsoft case. The two companies ended up in completely opposite positions concerning the necessity to bring the collaboration to a formal level by discussing of financial and non-financial agreements. This eventually resulted in a loss of motivation, mutual trust and interest and led the two organizations to gradually drift apart.

Looking at the *social dimension,* the social context played a crucial role in all three cases. Generally, it allowed to enhance the inter-firm organizational intimacy and facilitated the development of a shared vision for innovation and a strategic direction. In the DG case, transparency and trust had been built over time by investing in one-to-one relations at the management level, as well as through constant communication and an open and positive environment. Assessing each other commitment and motivation in the first phase of the collaboration was an important determinant to fine-tune each other, align expectations, and create a shared and clear strategy. In this regard, achieving a good understanding of each other problems and capabilities through constant feedback and information sharing led the two companies to create a strong sense of accountability and mutual dependence, which in turn resulted in moving the focus from formal contract to the "spirit" of the contract – a perceived agreements on mutual obligations. In line with these findings, overcoming cultural differences and creating a trustful and positive environment represent crucial elements to successfully foster the AFKL-TCS collaboration on APIs. By investing in people and team development, by appointing dedicated figures for the management of the overall partnership, and by benefiting from the trust and mutual commitment built in previous joint projects, the two firms greatly enhanced working relations at every level of the collaboration. Moreover, the analysis of the interviews also indicate that none of the parties involved felt the necessity to create an additional contractual terms for this specific project, due to the already existing positive working relations between the two companies. Finally, the Microsoft case suggests that a negative social context can potentially trigger additional problems and impediments. The analysis of the interviews shows that the two companies did not invest time upfront to understand each other views, processes and requirements, as well as to develop a common understanding at management level on the scope of the collaboration. This translated into ambiguous strategic directions and contrasting goals: while Microsoft was pushing for fast development, financial investment and short-term gains, AFKL was focused on a long-term journey, thus requiring more time to assess the value of the collaboration.

Finally, the findings from the study cases suggest that the *organizational dimension* generally had a deep impact on the outcome of inter-firm collaborations. In the DG case, decision-making autonomy, similar working methodologies and working structures, flexible processes, and direct communication between teams were all organizational characteristics that allowed the two companies to achieve high coordination and enhance social working relationships. In addition, the limited number of managers involved and well-defined and split responsibilities enabled to delineate clear management directions and established one-to-one relations. Such organizational measures created an environment where the two companies could easily work together and focus their effort on creating business value rather than on alignment issues, as well as reinforce the sense of mutual accountability and commitment. In line with these findings, the TCS case indicates that intra and inter-firm organizational alignment is a fundamental conditions to successfully carry out highly-complex innovation projects. In particular, defining a mixed governance team, overcoming critical management challenges (e.g., off-shoring), and aligning working methodologies enabled the two companies to keep the focus on the strategic goals of the partnership, despite initial difficulties, delays and additional cost. Moreover, direct functional communication, the creation of virtual teams, and the high mobility of people allowed to quickly enhance working relationships and increase the involvement and commitment of the two organizations. As a consequence, the intertwine between organizational and social dimension greatly increased the inter-firm alignment. On the other hand, the Microsoft case suggests that a lack of organizational planning can lead to several impediments and misunderstandings. This collaboration suffered since the beginning from a poor definition of roles and responsibilities, as well as from a low involvement of the higher managerial levels. This resulted in a lack of support and resources and a complete disconnection between day-to-day operations and the (unclear) strategic directions. Moreover, this situation hampered the relationships at personal level, which eventually had a negative repercussion on the overall collaboration.

4.4.2 Case-specific explanations

During the selection of the study cases, it has been chosen to investigate very contrasting and different cases. This difference refers to the size and type of the collaboration projects and to the size and type of the vendor involved, as well as to the different starting points of the collaborations. This choice is in line with the Conceptual model proposed in section 1.6, where two moderating variables have been defined: Vendor Size and Relationship Age. This sections explains how such characteristics have influenced the relationship between organizational, social and contractual conditions and the overall inter-firm alignment.

The analysis of the DG case suggests that the *vendor size* represented a critical element for a successful development of the new customer service application. Specifically, the limited size of the company allowed to immediately forge close working relationships thanks to its informal and pragmatic social context. Moreover, its simple structure enabled a smoother and more flexible management of the collaboration since its beginning. In regards to *relationship age*, this project was the first contact between the two companies. Therefore, the two companies had to invest time upfront to build trust and mutual commitment, as well as to assess the feasibility of the joint project. This uncertainty can be noted also on the way contractual agreements have been managed. In fact, the Innovation Contract has been defined only in a second phase of the collaboration, as a "reward" for a successful initial results.

In line with the previous case, the *vendor size* has been indicated as a critical element in the TCS case. The choice to rely on large vendor greatly increased the technical capabilities and the number of experienced people thus boosting the quality and speed of the project. In fact, the large number of clients and resources available at TCS enable them to always be on the forefront of technological and market innovations and mature the hands on experience and technical knowledge necessary for highly complex innovation projects. However, the large size required the two companies to highly invest in the alignment of working methodologies and working structures, thus partly slowing down the project. Concerning the *relationship age*, its long-lasting nature allowed them to avoid time-consuming contractual negotiations and immediately focus on the strategic content of the collaboration, thus speeding up the collaboration. Moreover, since the beginning they had the possibility to leverage on already existing factors such trust, commitment and company understanding.

The findings from the Microsoft case provide less insights of the impact that *vendor size* had on the collaboration. Specifically, it seems that the complex structure of Microsoft SG required their representatives to go through a series of formal authorization processes, which eventually represented a motive of conflict and misalignment. In addition, this complexity resulted in a lack of clarity of roles and responsibilities from AFKL's perspective. Concerning the *age of the relationship,* the fact that the two organization have been commercial partners for years did not eventually help the collaboration to flourish, contrary to the previous cases. This can be explained by the fact that the long-lasting relationship between AFKL and Microsoft has always revolved around the purchase of licences and basic services, rather than projects with high innovation content. Therefore, the two companies were used to work with the commercial units on a contractual level and have never had the chance to fine tune each other and build real company trust, as happened in the TCS study case.

4.4.3. Discussion

The cross-case comparison allowed to depict a more complete and integrated picture of the three dimensions identified in the literature review. Specifically, this analysis suggests that while all three dimensions need to be addressed during the initial phases of a strategic partnership oriented to innovation activities, the interrelations between social and contractual dimensions and between social and organizational dimensions required a more careful consideration. In regards to the intertwine between social and contractual dimensions, the findings from the case study suggest that during the early stage of a joint innovation project in the IT environment, a governance based on relational and behavioural elements tends to complement, or even substitute, formal governance, due to a fluidity of goals, requirements and expectation typical of IT innovation projects. For instance, the DG case shows that initially the client firm primarily relies on outcome-based and behavioural control mechanisms, rather than on formal rules and procedures, which are established only at later stages through the definition of KPIs. Similarly, the TCS case suggests an initial high-level of inter-firm trust and mutual commitment based on a long-lasting relation enabled the two organizations to avoid contractual negotiations and immediately address the content, strategic goals and functional problems of the

collaboration. Therefore, the early stage of an innovation project seems to benefit from relational governance, which is complemented later on by more formal mechanisms, as a better understanding of processes, objectives and activities emerges.

In regards to the interrelation between organizational and social dimensions, the study cases suggest that shared and well-defined organizational practises are critical to foster inter-firm social interactions and support the development of trust and commitment. Interpersonal exchange and mutual understanding are likely to increase when the governance of the collaboration is less centralized and formalized, as well as when more autonomy is given to its members. For instance, the DG case showed that high level of autonomy and few explicit rules and procedures increased the spontaneity and opportunities to employees for engaging discussions and thus support a positive, innovative and constructive climate. Accordingly, shared organizational practises and joint actions supported by upfront planning positively reflected on the social capital in the TCS case. On the other hand, the Microsoft case brings proofs that a lack of cooperation and shared planning, as well as unclear roles and responsibilities and low process flexibility can lead to a deterioration in the social climate by decreasing the level of trust and transparency among its members.

Drawn from the analysis of the moderator variables, V*endor Size* had a great influence in achieving inter-firm alignment. Difference in vendor size represents an important element that has to be taken into account in aligning the various facets of the collaboration. A smaller vendor requires less effort in building a positive social context, as well as in achieving organizational coordination. On the other hand, it requires more resources to assess its real long-term value and contribution, as suggested by the DG case. A larger vendor is characterized by more layered and complex structures, and thus necessitates higher efforts to align processes and actions. However, it also provides a larger sets of skills and capabilities, as well as more industry knowledge and experienced people, as it was the case of Microsoft and TCS. In regards to the second moderator, R*elationship Age* greatly influenced the causal relationship: a longer relationship allowed to avoid complex contractual agreements and negotiations, due to pre-existing agreement and inter-organizational trust and mutual understanding, as it happened in the collaboration AFKL-TCS. On the other hand, a lack of previous joint experience necessitated a higher initial efforts to build trust and assess each other commitment, as stated by the respondents of the DG case. Looking at the Microsoft case, important to note is the fact that while the relationship between the two companies had existed for several years, it did not help to foster mutual understanding and transparency, due to the commercial nature that characterized previous collaborations. This indicates that the type of content exchange and the focus of previous business relations may also represent another moderating factor in achieving inter-firm alignment.

4.4.3 Limitations

Two main limitations characterize the analysis part of this research: case heterogeneity and availability of information. The first limitation can be further categorized in four different aspects. First, each case has been characterized by different background conditions and organizational contexts: while the DG case has been carried out in a single domain and in a single airline (KLM), the TCS case required the involvement of both airlines and both IT and Business domains. This implies that the outcome of the collaboration could have been different depending on diverse processes, structures, cultures and management directions. Second, the duration and size of each project greatly varied over the three cases: while TCS case lasted over 6 years, had an impact on several domains and required the participation of dozens of people as well as of an offshore team, the collaboration with Microsoft ended within 2 years from its origin and took place only as a pilot in KLM Ground Services. Therefore, the larger and longer the project, the higher the chance to overlook important aspects and opinions during the interviews, given the limited amount of time and people interviewed. Third, the type and scope of the projects varied considerably across the case: while DG focused on a single product and on a single technology, TCS worked on the development of a completely new and complex IT infrastructure. This indicates that projects characterized by a broader scope are more likely to involve a larger number of phases, players and activities, thus increasing the variability of the findings. Fourth, looking at the outcome of the collaboration, a negative result forced the researcher to adapt the interview protocol, thus decreasing the strength of the findings of the Microsoft case.

The second category of limitations consists in the amount of available information for each specific case, as well as their relevance for this research. Specifically, the interviews on DG and TCS cases allowed to collect a satisfactory amount of information across all the different dimensions; on the other hand, addressing the three

perspectives in the Microsoft case resulted more complicated, due to the complex narrative and the contrasting views. In addition, the coding procedure described in section 3.2.4 has been carried out only for the first two cases, while the analysis of the Microsoft has been mainly driven by the insights and patterns hidden between the transcripts' lines, as well as by interviewees and author's elaborations. Finally, the impossibility to have access to specific documents limited the amount of data available for analysis. Important to note is the tendency of the interviewees to provide socially desirable answers, especially when investigating processes and activities under their responsibility.

4.5 Adapted Framework

Concluding from the analysis of the cases and based on a complex coding procedure, the following table displays the most relevant actions to undertake to ensure contractual, social and financial alignment when forming strategic collaborations with IT vendors.

Dimension	Sub-dimension	Actions
Contractual	Objectives	- Define high-level and clear goals - Focus on long-term objectives - Share a strategic roadmap
	Incentives	- Construe a mutually beneficial compensation model
	Completeness	- Avoid specification of tasks and deliverables - Ensure high clarity on definitions - Guarantee scope and contractual flexibility - Set high-level performance metrics
Social	Alignment	- Ensure cultural match - Build team commitment - Stimulate mutual process and company understanding
	Attitude	- Build inter-firm trust - Focus on conflict-resolution - Ensure process and communication transparency
	Exchange	- Forge good relations at management level - Create knowledge sharing and retention mechanisms - Build jointly accessible information server
Organizational	Interactions	- Establish multiple communication channels - Establish direct functional communication
	Planning	- Craft an agile product roadmap - Ensure high team mobility - Align working methodologies
	Structures	- Define mixed governance and mixed teams - Define clear roles - Split responsibilities - Allocate dedicated and full-time managerial figures - Ensure decisional autonomy and process flexibility

Table 14. Key actions

5. Discussion and conclusions

In the next sections, we first present the overall conclusion of the thesis by providing an overview of the findings. After that, we analyse the contribution that this research provide from a scientific perspective. Third, we provide a set of managerial recommendations. Finally, we discuss the limitations of this study and suggest multiple directions for future research.

5.1 Key Findings

The goal of this Thesis was to analyse how service companies can improve the level on inter-firm alignment during the formation of innovation partnerships with strategic IT vendors. The findings allow us to answer the main research question, as outlined in the next paragraphs.

Based on a combination of multiple perspectives, this research analysed three dimensions of vendor-client relationships, namely contractual, social and organizational. Our findings show that while all three dimensions are relevant and need careful consideration to achieve inter-firm alignment, the success of the initial phase of IT innovation partnerships is mainly dependant on the social and organizational ones. In addition, the results indicate that there is a significant interrelation between the social and contractual dimensions, as well as between the organizational and social ones. Finally, this study provides evidence that both vendor's size and the age of (pre)existing inter-firm relations are elements with a relevant moderating effect on the relationship between contractual, social and organizational dimensions and the level of inter-firm alignment.

The results of this research indicate that jointly addressing the social dimension and contractual dimensions is a prerequisite in IT vendor-client collaboration, whose relational elements enable to reduce the contractual and formal governance of the collaboration by providing a form of 'social control'. In this regard, the social dimension resulted to be an important determinant to fine-tune each other, align expectations, bypass contractual agreements and define a long-term common strategic direction. The DG and TCS cases provide evidence that contractual governance can be partly substituted by relational governance, where commitment, trust, informal control mechanisms and constant and direct communication play a key role. This result is in contrast with the work of Heidi et Al. (2010), who highlighted the critical role of contractual governance as facilitator of commitment, task allocation, and conflict management. Conversely, todays IT innovation contracts cannot account for all the different contingencies that could emerge during the collaboration. In addition, it has been argued that the control of contractual clauses is costly and not always effective. This is the consequence of the embeddedness of IT products, as well as to the ever changing requirements of IT artefacts that result from a continuously evolving technology and market landscape (Goo, et al., 2009). Therefore, taking into account these limitations, it can be contended that the initial phase of strategic partnerships benefit from relational governance mechanisms based on social and behavioural factors, a great sense of accountability and a shared understating of obligations that goes beyond the formal clauses. Accordingly, more detailed contractual agreements should be addressed only at later stage, as a better understanding of processes, objectives and activities emerges. Furthermore, we argue that the quality of relational governance can lay the foundation for the development of more efficient and effective formal controls.

In addition to the interrelation between social and contractual factors, we found that also the organizational dimension is critical in achieving the alignment of two collaborators. All the cases emphasise the importance of reaching inter and intra-firm organizational alignment during the first phase of the collaboration as a way to prevent slowdowns and reduce functional impediments. Flexible and fast processes, cross-functional communication, mixed governance, and an effective common working methodology lay the foundations for a successful collaboration, as they reduced misunderstandings and enhanced the overall coordination. In addition, the findings suggest that the definition of shared organizational practises and simple organizational structures allows to enhance the social and behavioural side of the collaboration. Accordingly, in case where such alignment is lacking, also the social dimension may be undermined. Specifically, a lack of direct communication, joint planning and inter-firm engagement model have been identified as elements affecting the social interactions and organizational trust. As such, we argue that IT collaborations benefit from an upfront definition of organizational structures that are less formalized, less centralized and more integrated, in line with the findings of Chen & Huang (2007). In addition, we content that developing a practical and dedicated

governance with clear authority lines and experienced managers in liaison management, as well as build co-development work plans is critical during the implementation phase of a strategic collaborations.

In this research we also found evidence that the vendor's size and the age of (pre)existing inter-firm business relations have a moderating effect on inter-firm alignment. The first one influences the level on inter-firm alignment by requiring different approaches on the three dimensions. Specifically, a limited size enables faster communication and decisions, and is characterized by less formalized and autonomous structures. As such, the client firm requires to adapt his structure, processes and way of working as to reach higher flexibility and speed, thus a higher degree of alignment. Furthermore, relational governance mechanisms based on inter-personal trust at management level, commitment and mutual sense of accountability seems to represent an important driver in case of small vendors. When larger vendors are part of the collaboration, crucial is to provide the appropriate organizational structures with clear authority lines and guarantee the presence of jointly accessible information and cross-function communication (i.e., through Agile methodology and virtual teams), as to streamline complex processes and decision making. In addition, the findings suggest that the larger the size, the more effort is required to overcome cultural differences and support social interactions. The latter represents the starting point of the collaboration, and, as such, it greatly influences the way in which contractual, social and organizational dimensions are engaged by the firms and their impact on inter-firm alignment. Specifically, the findings suggest that long-lasting relations on projects with innovative content allow to take advantage of existing inter-organizational trust and set the basis for more flexible contractual agreements. On the other hand, new-born relationships require upfront efforts from the management to assess each other honesty, openness and commitment. We found also that pre-existing business relations do not necessarily provide the ground for a successful collaboration. On the contrary, the focus and content (e.g., radical vs incremental innovation) of existing inter-firm activities is another factor that needs to be carefully considered and that was not present in the current study.

5.2 Theoretical contribution

This study contributes to the existing scientific literature on IT relationship and IT innovation management in numerous ways.

It provides a multi-dimensional perspective on the building process of IT collaborations within a context of innovation, whilst past literature has mainly studied it from any single perspective and for non-innovation activities. As such, it enabled to determine and compare the explanatory power of each dimension. Moreover, the combination of multiple perspectives allowed us to study how they are intertwined and how this affects the quality of the partnership formation process. Specifically, we found that the interrelation between social and contractual dimensions reflects on the kind of governance and control mechanisms adopted. Accordingly, we argued that that that during the early stage of a joint innovation project in the IT environment, a governance based on relational and behavioural elements tends to complement, or even substitute, formal governance. This recommendation is in line with the findings of Wullenweber et Al. (2008) and Gietzmann (1996), who indicate that IT innovation projects do not allow for the full specification of contractual agreements. As a consequence, contracts cannot longer represent reliable instruments of risk mitigation and thus lose their primary role in IT settings. On the other hand, the findings of this research oppose to the view of Miranda and Kavan (2005), who suggest that complete contractual agreements are necessary to build a collaborating model and are needed to frame subsequent relational governance. Conversely, we argue that this view neglects the role of contracts as repositories of inter-organizational learning (Mayer, 2004), where central is the formalization of norms and practises developed through relational governance. This is consistent with the findings of the DG case, where contractual agreements represented only the formalization of already established joint practises (i.e., PR and Marketing activities) and a way to make explicit the partnerships to the external environment.

Based on the findings of the study cases, we also extend the theory of Poppo and Zenger (2002), who argued that organizations need to address both the social and contractual dimensions in the formation of inter-firm collaborations, although they did not provide any direction related to their sequentiality. In order to fill this gap, we suggest that firms should first focus and emphasize the role of relational governance based on social factors, which in turn facilitates the elaboration of contractual agreements that should be introduced at later stages. The importance of relational governance emerged also in the TCS case, which showed that past joint experience in managing IT complex projects resulted in an initial strengthened social dimension, which in turn enabled to bypass time-consuming contractual negotiations.

We found that the organizational dimension is likely to affect the social climate and social interactions during the formation process of innovation partnerships. We integrate the work of Cheng and Huang (2007) by arguing that less formalized, more decentralized and more flexible organizational structures and processes stimulate social interactions, mutual understanding and trust among its members, which in turn increase the quality of the relationship. Moreover, we contribute to the existing knowledge by brining proofs that, to be successful, organizations need to rethink their organizational practises and processes, as to adapt to the characteristics of their partners and to those of dynamic environments such as the IT one. This in consistent with the findings of Ploetner & Ehret (2006), who argued that "*organizational structures and processes are built in order to provide employees incentives for value maximization within the company, not within partnerships*". Moreover, it support the findings of Leimeister et Al. (2008), who highlighted the importance of designing dedicated organizational structures and management frameworks to achieve inter-firm integration. Specifically, embedding the collaborating organizations on multiple levels through an appropriate management model eases communication and facilitates joint decision making. Finally, this study provides empirical evidence in support of previous research on the influence of organizational practises and characteristics on the social dimension in inter-firm and alliance-based collaborations (Janz & Prasarnphanich, 2003) (Dayer & Sivadas, 2000) (Chen & Huang, 2007).

We provided more clarity on other factors that potentially affect the formation of IT innovation partnerships (e.g., vendor size, relationship age). While past literature in relationship management and vendor selection have mainly focused on the nature of collaborations (e.g., formality, symmetry, and number), much less have been written and few empirical studies have been conducted on the characteristics of the partners and their previous relations (Iyer, 2003). This study provides then insight into the way such characteristics influence the inter-firm alignment, by describing the impact they can have on different dimensions of the collaboration. In addition, we suggest that the focus and content (e.g., radical vs incremental innovation) of existing inter-firm activities is another factor that may affect the degree of inter-firm alignment in the initial phase of innovation partnerships.

This study contributed to the literature on Open Innovation by providing a deeper understanding on how to open up the IT function in order to leveraging external partners' capabilities for business benefits. While most research on Open Innovation focuses on certain parts of the innovation process and their characteristics, we provided insight into the way firms set the basis to initiate such activities. Moreover, we did this by adopting the perspective of both partners, rather than focusing solely on the client firm, which is another characteristic typical of existing Open Innovation research. This is important because it allowed to capture and analyse the characteristics, structures, requirements and expectations of innovation partnerships from both perspectives, thus giving more consistency to our results. Moreover, we carried out our study in the IT service industry, a domain where the concept of Open Innovation has only lately gained attention and where empirical research remain scarce (Lacity, et al., 2010) (Virlée, et al., 2015). In this regard, we argue that the intangible nature of IT artefacts may demand higher cooperation and grater scope and process flexibility, due also to the dynamic market and technological environments characteristic of the IT domain.

Last, this study investigated a rather special context, the airline service industry, which has been little studied by previous researchers due to the difficulties that are generally encountered to have access to information, data and study cases. In addition, this research focused on breakthrough innovation projects that typically have little space in this industry due to the tendency of airline companies to imitate already existing services in other domains (Hipp & Grupp, 2005). The results showed us that while airline companies are increasingly relying on external parties to ensure long-term innovation, many efforts are still required in moving airline companies from a cost-reduction mind-set to a value creation one. This shall also be reflected on the organization of internal processes and structures, whose alignment and integration is crucial to foster successful inter-firm collaborations.

5.3 Managerial implications

Thanks to this study, it is now possible to bring more clarity on the management of the initial phase of IT innovation partnerships. As such, it provides assistance to IT managers in identifying and understanding the relevant elements to achieving and sustaining good inter-firm collaborations. The results suggest that managers engaging vendors in the context of innovative projects should address the contractual, social and organizational dimensions in a jointly manner, in order to support the overall firms' alignment.

Contrary to what is often assumed, the strongly dynamic nature of innovation projects in the IT environment should discourage contract managers to set up sophisticated formal contracts during the initial phase of partnership formation. Accordingly, the contract should be used only as a high-level framework, rather than a tool of strict enforcement of governance. On the other hand, we argue that in innovation-oriented relationships that tend to be more like strategic partnerships benefit from relational governance mechanisms. Initial efforts have to focus on embedding the collaboration in the core social interactions, which have been identified the element of trust, transparency, mutual sense of accountability, good will and cultural convergence. For this reason, it is critical that the various persons involved in the initial phase of a collaboration speak the same language and are prepared to accept compromises and temporary sacrifices in the face of uncertain results. Moreover, the results suggest that the beginning of a collaboration is often driven and dependent on few persons. Therefore, IT managers need to carefully select their representatives, while, at the same time, ensure that changes in the workforce or wakened personal relations will not affect the governance mechanisms.

Still, we suggest that contracts can represent powerful tools in two ways. First, as high-level frameworks, they can support relational governance mechanisms, as they can help in defining and clarifying communication channels, decision-process, resources and lines of authority. Second, as evolving frameworks, they represent repositories of inter-organizational learning (Mayer, 2004), by reflecting the knowledge developed throughout the collaboration and by incorporating the proven practises.

Furthermore, managers need to build proper methodologies and organizational practises to embed their people on different levels with the partner company, as well as prepare their organizations for the integration of business and decision-making processes. This is an important element to guarantee a quick reaction to the transforming circumstances of the IT landscape. In addition, IT managers should acknowledge the critical role of social interactions, which need to be facilitated and supported through both formal and informal organizational measures and practises. At the same time, innovation partnerships require active management involvement from both parties, beyond to what contractual clauses may imply. In fact, this research refuses the traditional view where the vendor takes over the various activities and the client stands back and monitors.

As practical output of this Thesis, the managerial recommendations drawn from the findings have been translated into a pragmatic framework, which can be found in the Appendix 2.

5.4 Limitations

Having discussed the limitations of the case study methodology in section 4.4.3 (e.g., case heterogeneity and availability of information), we now focus on the additional constraints of this study.

First, the limited number of interviews per case and the low number of cases may hinder the external validity of the findings. In order to mitigate this effect, we selected highly heterogenic cases characterized by different background conditions, scope, organizational contexts, duration and outcomes. In addition, the high ranks of the respondents of the various interviewed companies allowed to increase the generalizability of the findings, due to their broader perspective.

A second limitation of this research lies in the specific characteristics of the company under study (e.g., AirFrance-KLM) and in those of the industry in which the study has been carried out (e.g., Airline service industry), which together weaken the external validity of our results. In regards to the company-specific characteristics, we infer that our results might be different in airline companies with different business models (e.g., low-cost providers such as Ryanair) or with a more recent history and diverse context (e.g., Middle-east airlines such as Etihad or Emirates). Furthermore, the post-merger integration process between AirFrance and KLM created additional unique contextual conditions that further limit the generalizability of our findings to other organizations. In regards to the industry-specific characteristics, we have argued that innovation activities in the airline service context are restricted by nature and limited to incremental changes, due to the tendency of airline companies to imitate already existing services in other domains. Moreover, its conservative and highly regulated nature and the limited number of players in this industry do not allow for high generalization, especially in those contexts lacking of such characteristics. Therefore, we content that our results are more valuable for those companies addressing innovation in industries with similar traits and where IT represents a growing component (i.e., Telecommunication, Railroad).

Third, the study cases require the analysis of events and episodes that took place at different points in time in the past, which implies that the interviews have been conducted only after the phenomenon under study. Therefore, respondents may have been affected by retrospective sensemaking, meaning that they might have reconstructed the narrative in a way that fits the either positive or negative result of the collaboration (Mills, et al., 2010). In order to mitigate this effect, we selected respondents from both firms, with an extensive knowledge and with different perspectives (i.e., IT and Business functions), as suggested by Eisenhardt and Graebner (2007).

Fourth, the coding procedure might have suffered from a certain level of subjectivity, especially during the identification and categorization of patterns against the Theoretical Framework of section 2.4. Additionally, our findings have not been validated by experts from the field of IT relationship management and IT innovation management, due to the limited time available for this project. Both constrains negatively reflect on the internal validity of our results, due also to the rich perspective of the findings. We tried to mitigate this effect by iterating the coding procedure multiple times and by continuously referring to respondents' quotes throughout the study.

Fifth, the findings indicate that the three dimensions considered in this study are interrelated to a certain degree. However, the interview protocol was designed to address each dimension separately. We faced this constraint as it emerged in our study by deviating from the interview protocol and by addressing specific issues in relation to the role of the respondent in case it was considered necessary (e.g., Microsoft case). In turn, this might have affected the reliability of our results. However, achieving high reliability has often been indicated as a limitation of qualitative research (Yin, 2009).

5.5 Future research

Based on the findings of this research and on its limitation, new directions for future research are proposed.

First, further research is needed to assess whether the findings of this study can hold in other settings. As discussed in the previous section, our results are more valuable for those firms operating in industries with traits similar to the airline service industry. As IT innovation partnerships are becoming more and more relevant in several service sectors, we suggest scholars to carry out similar studies in other industries and compare the findings. For instance, the E-commerce sector represents a diverse and fascinating setting because of the strong business value of IT, the large number of smaller players and partnering opportunities, and its recent exponential growth.

Second, future research could further examine the relation between relational and contractual governance and assess whether these two governance mechanisms can co-exist simultaneously (either as complementary or substitute) or are characterized by mutual sequentiality. In this regard, researchers are suggested to consider and further study the role of psychological contract, defined as "*a perceived mutual agreement between two parties on the obligations of both sides, which creates a strong sense of accountability and is therefore psychologically binding*" (Lioliou, et al., 2014, p. 512), which only lately has gained relevance in the context of Information Systems and outsourcing.

Third, we advise that future research focus on the favourability of the environment in which the collaboration takes place and examine the role of wider institutional and environmental factors. For instance, competitor initiatives, vendor's performance with other organizations, and industry regulatory standards can provide additional insights on the elements affecting the behaviours of partners when entering inter-firm collaborations. Specifically, this assessment can bring more clarity into the elements that influence the type of governance adopted and in evaluating its effectiveness.

Fourth, we advocate scholars to carry out additional studies that focus on the interactions not only across various collaborations, but also to learn more about how the relationship become institutionalized and how the adaptation process takes place. The findings of this research suggest that innovation-oriented IT collaborations are characterized by distinct phases that require specific governance mechanisms and organizational measures. Therefore, it would be useful to examine the partnership formation process with a longitudinal approach. This could bring additional insight on how the various dimensions that characterize these relationships evolve over time.

Bibliography

Ackerman, D., 2011. *The Complete Guide to Effective Vendor Management,* Mexico City: Gartner.

Aloini, D. & Dulmin, R., 2015. Structured selection of partners in open innovation: an IF-TOPSIS based approach. *Measuring business excellence,* Volume 20, pp. 53-66.

Al-Roomi, M., Al-Ebrahim, S., Buqrais, S. & Ahmad, I., 2013. Cloud Computing Pricing Models: A Survey. *International Journal of Grid and Distributed Computing,* 6(5), pp. 93-106.

Anderson, J. & Narus, J., 2004. Business market management: Understanding, creating, and delivering value.

Anderson, J. N. J., 1990. A model of distributor firm and manufacturer firm working partnerships. *Journal of Marketing,* pp. 42-58.

Anon., 2013. Aligning Misaligned Systemic Innovations: Probing Inter-Firm Effects Development in Project Networks. *Project Management Journal,* Volume 44, p. 77–93.

Asikainen, A. & Mangiarotti, G., 2016. Open innovation and growth in IT sector. In: *Service Business.* s.l.:Springer, pp. 45-68.

Aubert, B., Iriyama, A., Kay, O. & Kishore, R., 2014. Investigating the relationship between outsourcing and innovation. *Information Systems Outsourcing,* pp. 23-36.

Azadegan, A. & Dooley, a. K. J., 2010. Supplier Innovativeness, Organizational Learning Styles and Manufacturer Performance: An Empirical Assessment. *Journal of Operations Management,* Volume 28, p. 488–505.

Babin, R. & Schuster, C., 2012. Building innovation into the outsourcing relationship: a case study. *Journal of Information Technology Teaching Cases,* Volume 2, pp. 98-103.

Barney, J. B. & Hesterly, W., 1999. Organizational economic: understanding the relationship between organizations and economic analysis. *Studying Organization*, pp. 109-141.

Barthèlemy, J. & B., Q., 2006. Complexity of outsourcing contracts and ex post transaction costs: an empirical investigation. *Journal of Management Studies,* pp. 1775-1797.

Baxter, P. & Jack, S., 2008. Qualitative Case Study Methodology: Study Design and Implementation for Novice Researchers. *The Qualitative Report,* Volume 13, pp. 544-559.

Benouakrim, H. & El Kandoussi, F., 2013. Relationship Marketing: Literature Review. *International Journal of Science and Research,* Volume 2, pp. 148-152.

Berchicci, L., 2013. Towards an ope R&D system: Internal R&D investment, external knowledge acquistition and innovative performance. *Research policy,* Volume 42.

Berry, L. & Leonard, 1983. Emerging Perspectives on Services Marketing. In: *Relationship Marketing.* CHicago: American Marketing Association, pp. 25-28.

Bianchi, M., S., C., Frattini, F. & Vercesi, P., 2010. Enabling Open Innovation in Small- and Medium-Sized Enterprises: How to Find Alternative Applications for Your Technologies. *R&D Management,* Volume 40, pp. 414-431.

Bigliardi, B., Dormio, A. & Galati, F., 2012. The adoption of open innovation within the telecommunication industry. *European Journal of innovation management,* Volume 15, pp. 27-54.

Blomqvista, K., Hurmelinnab, P. & Seppanen, R., 2005. Playing the collaboration game right—balancing trust and contracting. *Technovation,* pp. 497-504.

Blomqvist, K., Kyläheiko, K. & Virolainen, V., 2002. Filling a gap in traditional transaction cost economics: Towards transaction benefits-based analysis. *International Journal of Production Economics,* Volume 79, pp. 1-14.

Blumenberg, S., Beimborn, D. & Koening, W., 2008. *Determinants of IT outsourcing relationship: a conceptual model.* Frankfurt, Germany, Hawaii international conference of system sciences.

Bund, B., 1985. *Winning and Keeping Industrial.* Lexington, KY: Lexington Books.

Burcharth, A., Knudsen, M. & Sondergaard, H., 2014. Neither invented nor shared here: The impact and management of attitudes for the adoption of open innovation practices. *Technovation,* Volume 34, pp. 149-161.

Campbell, D., 1975. Degrees of freedom and the case study. *Comparative Political Studies,* 8(1), pp. 178-191.

Carillo, J. & Franza, R., 2006. Investing in product development and production capabilities: the crucial linkage between time-to-market and ramp-up time. *European Journal of Operational Research,* pp. 536-556.

Chen, C. & Huang, J., 2007. How organizational climate and structure affect knowledge management—The social interaction perspective. *International Journal of Information Management,* Volume 27, pp. 104-118.

Cheng, C. & Shiu, E., 2015. The inconvenient truth of the relationship between open innovation activities and innovation performance. *Management Decision,* Volume 53, pp. 625-647.

Chesbrough, H., 2006. *Open innovation: The new imperative for creating and profiting from technology.* Boston, Harvard Business School.

Chesbrough, H., 2011. Bringing Open Innovation to Services. *MIT Sloan Management Review,* Volume 52, pp. 84-91.

Chesbrough, H. & Davies, A., 2010. Advancing Services Innovation. In: *Handbook of Service Science.* s.l.:Springer, pp. 579-601.

Chesbrough, W. H., 2003. *Open innovation - the new imperative for creating and profiting from.* s.l.:Harvard Business School Publishing Corporation.

Coates, M. & Bals, L., 2013. Externa innovation implementation determinants and performance measurement: a case study from the pharmaceutical industry. *Technology and Investment,* Volume 4, pp. 131-143.

Cohen, L. & Young, A., 2006. *Multisourcing: Moving beyond outsourcing to achieve growth and agility.* s.l., Harvard Business School Press.

Cole, R., Purao, S. & Rossi, M. S. M., 2005. *Being Proactive: Where Action Research Meets Design Research.* Las Vegas, International Conference on Information Systems.

Cong, Q. & Chau, P., 2010. *Relationship and contract issues of IT outsourcing - Descriptive case studies in China regions.* Taipei, Taiwan, Pacific Asia Conference on Information Systems.

Cortese, F., 2015. *Procurement Outsourcing: Gainsharing or Fee-for-service model?.* [Online] Available at: https://www.linkedin.com/pulse/procurement-outsourcing-gainsharing-fee-for-service-model-cortese

Costa, J., Dewes, M. & Macada, A., 2011. *IT Outsourcing as a Source of Open Innovation.* Detroit, Americas Conference on Information Systems.

Cottam, A., Ensor, J. & Band, C., 2001. A benchmark study of strategic commitment to innovation. *European Journal of Innovation Management,* pp. 88-94.

Cronk, J. & Sharp, J., 1995. A framework for deciding what to outsource in information technology. *Journal of Information Technology,* Volume 10, p. 259–267.

Dayer, F. & Sivadas, E., 2000. An examination of organizational factors influencing new product success in internal and alliance-based processes. *Journal of Marketing,* Volume 64, pp. 31-50.

de Jong, G. & Woolthuis, R., 2009. The content and role of formal contracts in high-tech alliances. *Innovation: management, policy & practice,* Volume 11, pp. 44-59.

de Jong, J. P., Bruins, A., Dolfsma, W. & Meijaard, J., 2003. Innovation in service firms explored: what, how and why. *EIM Business Policy Research,* Volume 18.

de Juniac, A., 2016. [Online] Available at: http://www.airfranceklm.com/en/introduction

de Reuver, M., 2009. *Governing mobile service innovation in co-evolving value networks.* Delft: s.n.

Dibbern, J., Goles, T., Hirschheim, R. & Jayatilaka, B., 2004. Information Systems Outsourcing: A Survey and Analysis of the Literature. *The Data Base for Advances in Information Systems,* Volume 35, pp. 6-102.

Doz, L. & Hamel, G., 1998. *Alliance Advantage: Creating Value through Partnering.* Boston: Harvard Business School Press.

Dwyer, F., Robert, F. & Rosemary, F., 1986. *On the nature and role of buyer-seller trust.* Chicago, American Marketing Association.

Eisenhardt, K. & Graebner, M., 2007. Theory building from cases: Opportunities and challenges. *Academy of Management Journal,* 50(1), pp. 25-32.

Elam, J., 1988. Establishing cooperative external relationships. In: *Transforming the IS Organziation.* Washington DC: s.n., pp. 83-98.

Emden, Z., Roger, E., Calantone, J. & Droge, C., 2006. Collaborating for New Product Development: Selecting the Partner with Maximum Potential to Create Value. *Journal of Product Innovation Management,* Volume 23, pp. 330-341.

Enkel, E., Gassmann, O. & Chesbrough, H., 2009. Open R&D and open innovation: exploring the phenomenon. *R&D Management,* Volume 39, pp. 311-316.

Evangelista, R. & Savona, M., 2010. *Innovation and employment in services. The handbook of innovation and services: A multi-disciplinary perspective.* New York: Edward Elgar.

Ferrer, M., Santa, R., Soosay, C. & Hyland, P., 2009. *The critical competences needed for innovative organizational inter-firm and intra-firm integration.* Australia, Queensland, Brisbane, s.n.

Fisher, J., R., H. & Jacobs, R., 2008. Understanding the outsourcing learning curve: A longitudinal analysis of a large Australian company. *Information Systems Frontiers,* Volume 10, pp. 165-178.

Flyvbjerg, B., 2006. Five Misunderstandings About Case Study Research. *Qualitative Inquiry,* Volume 12, pp. 219-245.

Gartner, 2011. *Executive Summary: Managing Strategic Partnerships.* [Online] Available at: https://www.gartner.com/doc/1727978/executive-summary-managing-strategic-partnerships

Gietzmann, M., 1996. Incomplete contracts and the make or buy decision: governance design and attainable flexibility. *Accounting, organizations and society,* pp. 611-626.

Goles, T., 2001. *The impact of the client-vendor relationship on information systems outsourcing success,* Houston: The Faculty of Bauer College of Business.

Goo, J. & Huang, C., 2008. Facilitating Relational Govenance thorugh Service Level Agreements in IT Outsourcing: an Application of the Commitment-Trust Theory. *Decision Support Systems,* Volume 46, pp. 216-232.

Goo, J., Kishore, R., Rao, H. & Nam, K., 2009. The Role of Service Level Agreements in Relational Management of Information Technology Outsourcing: An Empirical Study. *MIS Quarterly,* Volume 33, pp. 119-145.

Gottschalk, P., 2005. Critical sucess factors from IT outsourcing theories: an emipirical study. *Industrial Management & Data Systems,* Volume 105, pp. 685-702.

Grandori, A., 2006. Innovation, uncertainty and relational governance. *Industry and Innovation,* Volume 13, pp. 127-133.

Gregor, S. & Jones, D., 2007. The Anatomy of a Design Theory. *AIS Educator Journal,* Volume 8, pp. 312-335.

Grönlund, J., Sjödin, D. & Frishammar, J., 2010. Open Innovation and the Stage-Gate Process: A Revised Model for New Product Development. *California Management Review,* Volume 52, pp. 106-131.

Grover, V., Teng, J. & Cheon, M., 1998. Towards a Theoretically-based Contingency Model of Information Systems Outsourcing. In: *Strategic Source of Information Systems: Perspective and Practices.* New York: s.n.

Gupta, A. & Sahu, G., 2012. A literature review and classification of relationship marketing research. *International Journal of Customer Relationship Marketing and Management,* 3(1), pp. 56-81.

Gupta, V. & Sushil, 2014. Influence of relationship quality on IS/IT outsourcing success: indian vendors' perspective. *Journal of Information Technology Management,* Volume 25, pp. 1-19.

Haapio, H., 2013. Contract Clarity and Usability through Visualization. In: *Knowledge Visualization Currents.* London: Springer, pp. 63-84.

Habicht, H., Möslein, K. M. & Reichwald, R., 2012. Open Innovation Maturity. *International Journal of Knowledge-Based Organizations,* pp. 92-111.

Hart, O. & Holmstrom, B., 2016. *Oliver Hard and Bengt Holmstrom: contract Theory.* s.l., THE ROYAL SWEDISH ACADEMY OF SCIENCES, pp. 1-47.

Heide, J. & John, G., 1990. Alliances in industrial purchasing: the determinants of joint action in buyer-supplier relationships. *Journal ol Marketing Research,* Volume 27, pp. 24-36.

Heide, J. & John, G., 1992. Do norms matter in marketing relationship?. *Journal of Marketing,* 56(2), pp. 32-44.

Heidi, O., Pia, H., Kirsimarja, B. & Paavo, R., 2010. The Dynamics of Relational and Contractual Governance Mechanisms in Knowledge Sharing of Collaborative R&D Projects. *Knowledge and Process Management.*

Henderson, J., 1990. Plugging into strategic partnerships: the critical IS connection. *Sloan Management Review,* 30(3), pp. 7-18.

Hevner, A., 2007. A Three Cycle View of Design Science Research. *Scandinavian Journal of Information Systems,* Volume 19.

Hipp, C. & Grupp, H., 2005. Innovation in the service sector: The demand for service-specific innovation measurement concepts and typologies. *Research Policy,* Volume 34, pp. 517-535.

Hirschheim, R., Heinzl, A. & Dibber, J., 2002. *Information systems outsourcing.* s.l.:Springer.

Huizingh, E., 2011. Open innovation: state of the art and future perspectives. *Technovation,* Volume 31, pp. 2-9.

Hunt, S. & Davis, D., 2012. Grounding supply chain management in resource-advantage theory: in defense of a resource-based view of the firm. *Journal of Supply Chain Management,* Volume 48, pp. 14-20.

Iyer, E., 2003. Theory of Alliances; Partnership and Partner Characteristics. *Journal of Nonprofit & Public Sector Marketing,* 11(1), pp. 41-57.

Janz, B. & Prasarnphanich, P., 2003. Understanding the antecedents of effective knowledge management: The importance of a knowledge-centered culture. *Decision Sciences,* Volume 34, pp. 351-384.

Jones, D., 2012. *How to Transform Strategic Supplier Relationships.* [Online] Available at: http://www.itworldcanada.com/news/how-to-transform-strategic-supplier-relationships/144916

Kakabadse, A. & Kakabadse, N., 2002. Trends in Outsourcing:: Contrasting Usa and Europe. *European Management Journal,* Volume 20, pp. 189-198.

Kern, T. & Willcocks, L., 2000. Exploring information technology outsourcing relationships: theory and practice. *Journal of Strategic Information Systems,* pp. 321-350.

Kern, T. & Willcocks, L., 2001. *The relationship advantage: information technologies, sourcing, and management.* Oxford: Oxford University Press.

Kern, T. & Willcocks, L., 2002. Exploring relationships in information technology outsourcing: the interaction approach. *European Journal of Information Systems,* Volume 11, pp. 3-19.

Kern, T., Willcocks, L. & van Heck, E., 2004. The Winner's Curse in IT Outsourcing: Strategies for avoiding relational trauma. *California Management Review,* Volume 44, pp. 47-69.

Khan, I., 2014. Vendor Firm Characteristics and Buyers Perceptions of Transaction Costs and Relationship Governance. *Dissertations, Theses and Capstone Projects.*

Kim, H. & Park, Y., 2010. The effects of open innovation activity on performance of SMEs: The case of Korea. *International Journal of Technology Management,* Volume 52.

Krcma, H., 2007. *Exploring relationship types in information systems outsourcing arrangements: porposing A typology for IS.* s.l., irst Information Systems Workshop on Global Sourcing: Services, Knowledge and Innovation.

Kumar, N., 2012. Capability, Governance and Collaboration: Understanding the supplier perspective.

Lacity, M., Khan, S., Yan, A. & Willcocks, L., 2010. A review of the IT outsourcing empirical literature and future research directions. *Journal of Information Technology ,* Volume 25, pp. 395-433.

Lacity, M., Willcocks, L. & Khan, S., 2011. Beyond Transaction Cost Economics: Towards an endogenous theory of Information Technology Outsourcing. *Journal of Strategic Information Systems,* Volume 20, pp. 139-157.

Laegaard, J. & Bindslev, M., 2006. *Organizational Theory.* s.l.:Mille Bindslev & Ventus.

Larson, P., Carr, P. & Dhariwal, K., 2005. SCM involving small versus large suppliers: relational exchange and electronic communication media. *Journal of Supply Chain Management,* 41(1), pp. 18-29.

Lather, P., 1992. Critical frames in educational research: Feminist and post-structural perspectives. *Theory into Practice,* Volume 31, pp. 87-99.

Laursen, K. & Salter, A., 2006. Open for Innovation: The Role of Openness in Explaining Innovation Performance Among U.K. Manufacturing Firms. *Strategic Management Journal,* Volume 27, pp. 131-150.

Lazzarotti, V. & Pellegrini, L., 2015. Is your open-innovation successful? The mediating role of a firm's organizaitonal and social context. *The international Journal of Human Resource Management,* 26(19), pp. 2453-2485.

Lee, J.-N., Huynh, M., Kwok, R.-W. & Pi, S.-M., 2003. IT Outsourcing Evolution--Past, Present, and Future. *Communications of the ACM,* Volume 46, pp. 84-89.

Lee, J. & Kim, Y., 1999. 'Effect of partnership quality on IS outsourcing success: Conceptual framework and empirical validation. *Journal of Management Information Systems,* 15(4), pp. 29-61.

Leifer, R., O'Connor, G. & Rice, M., 2001. Implementing radical innovation in mature firms: the role of hubs. *Academy of Management Executive,* pp. 102-113.

Leimeister, S., Böhmann, T. & Krcmar, H., 2008. *Is outsourcing governance in innovatioin-focused relationships - an empirical investigation,* s.l.: ECIS 2008 Proceedings.

Liang, H., Wang, J., Xue, Y. & Cui, X., 2015. IT outsourcing research from 1992 to 2013: a literature review based on main path analysis. *Information & Management,* Volume 53, pp. 227-251.

Lin, S., Piercy, N. & Campbell, C., 2013. Beyond the Make-or-Buy Dichotomy: Outsourcing Creativity in the Fashion Sector. *Production Planning & Control,* Volume 24, p. 294–307.

Lintukangas, K., 2007. *Theoretical frames for studying supplier relationship management in global purchasing.* Salzburg, IFPSM Summer School on Advanced Purchasing Research.

Lioliou, E., Zimmermann, A., Willcocks, L. & Gao, L., 2014. Formal and relational governance in IT outsourcing: substitution, complementarity and the role of the psychological contract. *Info Systems,* Volume 24, pp. 503-535.

Luo, Y., 2002. Contract, cooperation, and performance in international joint ventures. *Management Journal,* 23(10), pp. 903-919.

Mahnke, V., Özcan, S. & Overby, M. L., 2006. Outsourcing Innovative Capabilities for IT-Enabled Services. *Industry and Innovation,* Volume 13 (2), pp. 189-207.

Malone, T. & Crowston, K., 1994. The Interdisciplinary Study of Coordination. *ACM Computing Surveys,* 26(1), pp. 87-119.

March, S. & Smith, G., 1995. Design and Natural Science Research on Information Technology. *Decision Support Systems,* Volume 15, pp. 251-256.

Matevz, R. & Maja, M., 2013. Buyer-supplier relationships and the resource-advantage perspective: an illustrative example of relational and transactional drivers of competitiveness. *Journal of competitiveness,* 5(1), pp. 16-38.

Mayer, K., 2004. Learning to contract: evidende from the personal computer industry. *Organization Science,* 15(4), pp. 393-410.

Mazzola, E., Perrone, G. & Kamuriwo, D., 2014. Network embeddedness and new product development in the biopharmaceutical industry: The moderating role of open innovation flow. *International Journal of Production Economics.*

McFarlan, W. & Nolan, R., 1995. How to manage an IT outsourcing alliance. *Sloan Management Review,* 36(2), pp. 9-23.

Mention, A., 2011. Co-operation and co-opetition as open innovation practices in the service sector: Which influence on innovation novelty?. *Technoviation,* Volume 31, pp. 44-53.

Mihalache, O., Jansen, J., Van den Bosch, F. & Volberda, H., 2012. Offshoring and firm innovation: The moderating role of top management team attributes. *Strategic Management Journal,* Volume 33, pp. 1480-1498.

Mills, A., Durepos, G. & Wiebe, E., 2010. *Encyclopedia of case study research.* s.l.:SAGE.

Miranda, S. & Kavan, C., 2005. Moements of governance in IS outsourcing: conceptualizing effects of contracts on value capture and creation. *Journal of Information Technology,* Volume 20, pp. 152-169.

Moller, K., Rajala, A. & Svahn, S., 2005. Strategic business nets—their type and management. *Journal of Business Research,* Volume 58, p. 1274– 1284.

Mooi, E. & Gosh, M., 2010. Contract Specificity and Its Performance Implications. *Journal of Marketing,* Volume 74, pp. 105-120.

Morgan, R. & Hunt, S., 1994. The Commitment-Trust Theory of Relationship Marketing. *Journal of Marketing,* 58(3), pp. 20-38.

Musteen, M. & Ashan, M., 2013. Beyond Cost: The Role of Intellectual Capital in Offshoring and Innovation in Young Firms. *Entrepreneurship: Theory and Practice,* Volume 37.

Namwoon, K. & Srivastava, R., 1998. Managing Intraorganizational diffusion of technological innovations. *Industrial Marketing Management,* Volume 27, pp. 229-246.

Newey, L., 2010. Wearing different hats:: How absorptive capacity differs in open innovation. *International Journal of Innovation Management,* Volume 14, pp. 703-731.

Newton, S., 2003. Promoting Learning in Organizations Through Embedded Case Studies. *Embedded Case Studies,* pp. 1-18.

Nielson, C., 1998. An empirical examination of the role of "closeness" in industrial buyer-seller relationships. *European Journal of Marketing,* 32(5/6), pp. 441-463.

Pasi, S., 2013. Critical factors in managing customer-supplier relations. *European Scientific Journal,* Volume 3, pp. 1857-7881.

Patton, M., 2002. *Qualitative Research & Evaluation Methods.* s.l.:Sage.

Payne, A., 2000. Relationship marketing: the U.K.. *Relationship marketing,* pp. 39-67.

Ploetner, O. & Ehret, M., 2006. From relationships to partnerships new forms of cooperation between buyer and seller. *Industrial Marketing Management,* Volume 35, pp. 4-9.

Poppo, L. & Zenger, T., 2002. Formal contract and relational governanc function as substitutes or complements?. *Strategic Management Journal,* 23(8), pp. 707-725.

Rašković, M. & Makovec, B. M., 2013. Buyer-Supplier Relationships and the Resource-Advantage Perspective: An Illustrative Example of Relational and Transactional Drivers of Competitiveness. *Journal of Competitiveness,* Volume 5, pp. 16-38.

Rey-Marston, M., 2013. *Alignment of inter-firm performance measures in contractual alliances as a predictor of relationship success.* s.l.:Cranfield University.

Rhodes, J., Lok, P. & Loh, W., 2016. Critical success factors in relationship management for services outsourcing. *Service Business,* Volume 10, pp. 59-86.

Robey, D., Farrow, D. & Franz, C., 1989. Group Process and Conflict in System Development. *Management Science,* 35(10), pp. 1172-1191.

Robinson, S., 1996. Trust and breach of the psychological contract. *Administrative Science Quarterly,* 41(1), pp. 574-599.

Rothkopf, M., 2009. *Innovation in commoditized service industries.* s.l.:Transaction.

Rubalcaba, L., Gago, D. & Gallego, J., 2010. On the difference between goods and services innovation. *Journal of Innovation Economics1,* Volume 1, pp. 17-40.

Salavisa, I., Sousa, C. & Fontes, M., 2012. Topologies of innovation networks in knowledge-intensive sectors: Sectoral differences in access to knowledge and complementary assets through formal and informal ties. *Technovation,* Volume 32, pp. 389-399.

Sarkar, M., Echambadi, R. & Cavudgil, S., 2001. The influence of complemetarity, compatibiliy, and relationship capital in alliance performance. *Journal of the Academy of the Marketing Science,* 29(4), pp. 358-373.

Scholz, R. & Binder, C., 2011. *Environmental Literacy in Science and Society: From Knowledge to Decisions.* s.l.:Cambridge University.

Scott, R., 1998. *Rational, Natural and Open Systems.* s.l.:s.n.

Sheng, S. et al., 2012. Relational Adaptation in Buyer-Supplier Relationship Management: A Synthesis of Effects of Exchange Hazards, Relational Norms, and Legitimacy. *Cahiers de recherche,* pp. 1-23.

Simpson, P. M., Siguaw, J. A. & White, S. C., 2002. Measuring the Performance of Suppliers: An Analysis of Evaluation Processes. *The Journal of Supply Chain Management,* Volume 38, p. 29–41.

Smith, H. & McKeen, J., 2004. Developments in Practice Xiv: It Outsourcing – How Far Can You Go?. *Communications of the AIS,* Volume 13, pp. 508-520.

Soy, S., 2006. *The case study as a research method.* [Online] Available at: https://www.ischool.utexas.edu/~ssoy/usesusers/l391d1b.htm

Strauss, A. & Corbin, J., 1998. *Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory.* CA: Sage.

Taneja, N. K., 2016. *Airline Industry: Poised for Disruptive Innovation?.* London, New York: Routledge/Taylor & Francis Group.

Todeva, E. & Knoke, D., 2005. Strategic alliances and models of collaboration. *Management Decisions,* pp. 1-22.

Trigo, A. & Vence, X., 2012. Scope and patterns of innovation cooperation in Spanish service enterprises. *Research Policy,* Volume 41, pp. 602-613.

Trigo, A. & Vence, X., 2012. Scope and patterns of innovation cooperation in Spanish service enterprises. *Research Policy,* Volume 41, pp. 602-613.

Urbach, N., 2014. *Towards a design theory for customer satisfaction-oriented it vendor management.* s.l., s.n.

Urbach, N. & Wurz, T., 2012. How to steer the IT outsourcing provider: development and validation of a reference framework of IT. *Business & Inforamtion System Engineering,* pp. 1-34.

van de Vrande, V., de Jong, J., Vanhaverbeke, W. & de Rochemont, M., 2006. Open innovation in SME's: Trends, motives and management challenges. *Technovation,* Volume 29, pp. 423-437.

Vanhaverbeke, W., West, J. & Chesbrough, H., 2014. Surfing the new wave of open innovation research. In: *New Frontiers in Open Innovation.* Oxford: Oxford University.

Veloutsu, S., Saren, ,. & Tzokas, M., 2002. Relationship Marketing - What if...?. *European Journal of Marketing,* 36(4), pp. 433-449.

Vershuren, P. & Doorewaard, H., 2010. *Design a Research Project.* The Hague: Eleven International Publisher.

Verweij, H. & Peek, L., 2013. *Supplier Relationship ManagementHow key suppliers drive your company's competitive advantage,* s.l.: PwC.

Virlée, J., Hammedi, W. & Parida, V., 2015. Open Innovation Implementation in the Service Industry: Exploring Practices, Sub-practices and Contextual Factors. *Journal of Innovation Management,* Volume 3, pp. 106-130.

Wadhwa, V. & Ravindra, A., 2007. Vendor Selection in Outsourcing. *Computers & Operations Research,* Volume 34, p. 3725–3737.

Wang, L., Gwebu, K., Wang, J. & Zhu, D., 2008. The Aftermath of Information Technology Outsourcing: An Empirical Study of Firm Performance Following Outsourcing Decisions. *Journal of Information Systems,* Volume 22, pp. 125-159.

Wang, P., 2009. Popular Concepts beyond Organizations: Exploring New Dimensions of Information Technology Innovations. *Journal of the Association for Information Systems,* Volume 10.

Wathne, K. & Heide, J., 2000. Opportunism in interfirm relationships: forms, outcomes, and solutions. *Journal of Marketing,* 64(4), pp. 36-51.

Weeks, M. & Feeny, D., 2008. Outsourcing: from cost management to innovation and business value. *Califronia management review,* Volume 50, pp. 127-146.

Willcocks, L., 2006. *The First Information Systems Workshop on Global Sourcing: Services, Knowledge and Innovation.* Val d'Isère, France, s.n.

Willcocks, L., Feeny, D. & Olson, N., 2006. Implementing core IS capabilities. *European Management Journal,* Volume 24, pp. 28-37.

Wüllenweber, K., Jahner, S. & Krcmar, H., 2008. *Relational Risk Mitigation: The Relationship Approach to Mitigating Risks in Business Process Outsourcing.* s.l., Hawaii International Conference on System Sciences.

Wullenweber, K., Jahner, S. & Krcmar, H., 2008. *Relational risk mitigation: the relationship approach to mitigating tisks in business process outsourcing.* Waikoloa, Hawaii, HICSS.

Yang, C., Liu, H. & Wang, X., 2013. Organziation theories: from classic to modern. *Journal of Applied Science,* 13(21), pp. 4470-4476.

Yin, R., 2003. *Case Study Research : Design and Methods.* Newbury Park: Sage.

Yin, R., 2009. *Case Study Research: Design and Methods.* London: Sage.

Yin, R., 2014. *Case Study Research Design and Methods.* s.l.:Sage.

Yoo, Y., Henfridsson, O. & Lyytinen, K., 2010. The new organizing logic of digital innovation: an agenda for information systems research. *Information Systems Research,* Volume 21, pp. 724-735.

Appendix 1. Interview Protocol

The Research Project

This research assignment has been commissioned by Edwin Borst (Senior Vice President Group CIO Office at Air France-KLM) and represents the core project of my Master Thesis for the Programme "Management of Technology" at Delft University of Technology

Objective

The main goal of the project is to give advices to Airfrance-KLM on how to organize the internal processes, structures, and resource to improve the formation of innovation partnerships with strategic IT vendors. This research objective originated from the question posed by Edwin Borst: "How can we improve the building process of the collaborations with our strategic IT vendors, as to move them towards a long-term, innovation-oriented contribution?" It has been argued that after a first assessment of the vendor's openness and willingness to invest in innovation, promising projects often do not meet Airfrance-KLM expectations or the collaborations end prematurely. In order to address this issue, the research is built on an analysis of the current processes, practises and approaches adopted by Airfrance-KLM to build long-term partnerships, a study of the barriers and impediments the firm is facing, with the goal of providing effective ways to tackle them.

Approach

The project is carried out in the IT department of Airfrance-KLM and in close collaboration with the Strategic Vendor Management Office. It consists of a preliminary literature review in the field of IT Relationship Management and Innovation Management. The resulting theoretical framework is built on three different but complementary dimensions of IT Relationship Management, namely Organizational, Contractual and Social dimensions. The Organizational perspective studies concepts such as interaction modes, project planning, roles and organizational structures. The Contractual perspective focuses on factors such as companies' formal and informal objectives, incentives, and contract clauses. The Social perspective looks into people's attitudes and behaviours, as well at nature and mode of personal and organizational exchanges. Such framework is then assessed against a series of case study. These cases have been selected as to provide an overview of both successful and unsuccessful collaboration projects with either well-established or prospective vendors. The outcome of the testing phase will be an improved framework and a set of practical recommendations for the IT management.

The interview

This interview has been organized in order to collect information on the building process of the collaboration between Airfrance-KLM and XXXXX.

In order to analyse the collected information, I am going to record the meeting with a recording device. Your answers will be then transcribed and analysed using a dedicated software. This software enables the identification of key concepts and patterns within the case. Eventually, I will perform a cross-case analysis in order to find patterns across the different cases and elaborate on the core factors of long-term, innovation-oriented relationships.

Confidentiality

All the collected data will be processed in a confidential way, and will be used for research purposes of my Master thesis, as well as within Airfrance-KLM.

Interview's structure and questions

1. Opening
      1.1. Introduction of myself and of the thesis project
      1.2. Methodology
      1.3. Confidentiality
      1.4. Summary of the interview and interview's objectives

2. Case study

2.1. Can you please briefly describe the nature of the project and your role in that?

2.2. What was AFKL initial idea and what did you want to achieve with this new collaboration?

3. Contractual dimension

3.1. What were the main strategic objectives of the relationship and how did you reach a common agreement? Which ones were agreed formally and which ones informally?

3.2. How did AFKL compensate X in introducing innovative solutions?

3.3. Which type of information and which level of detail have been used in writing the contract?

4. Social dimension

4.1. Which attitude did the people have towards the discussion of the collaboration in the initial phases of the relationship?

4.2. What were the main points of alignment/misalignment? In your opinion, what were the underlying causes?

4.3. How did relations on a personal level influence the information and knowledge exchanges during the initial phases of the collaboration?

5. Organisational dimension

5.1. How was the collaboration building process managed in terms of management structures and resource control?

5.2. What kinds of mechanisms did you use to support the interactions between the two organizations?

5.3. How did you manage the future planning of the collaboration? How did you decrease its level of complexity?

6. Sum-up

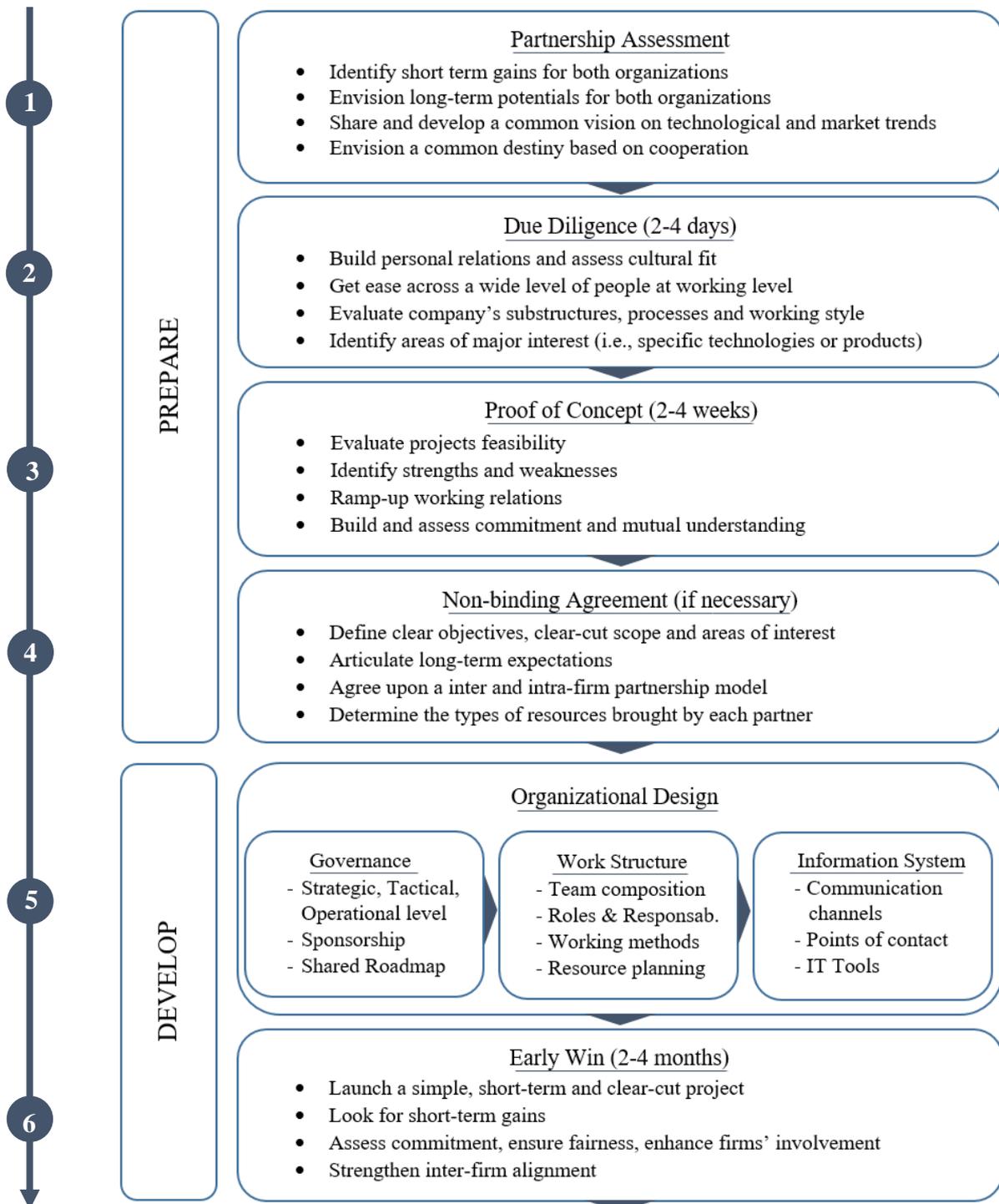6.1. If I missed any important element, could you tell me what and elaborate on that?

6.2. What was the lesson learned?

6.3. Looking back at the scope and motive of the collaboration, to what extend did you eventually have a common understanding and where are you now?

7. Ending

7.1. What did you think of the interview?

7.2. Could you recommend me any other relevant case to consider or person I should talk to?

Appendix 2. IT Partnership Framework

Drawn from the Conceptual Model and the Framework presented in section 4.5, from the study cases' findings and from the literature on Innovation and Relationship Management, it is now possible to build a comprehensive framework for the management of inter-firm strategic collaborations. It aims at providing guidelines to enhance inter-firm alignment during formation of innovation partnerships and represents a useful instrument for IT managers to leverage the capabilities of strategic IT partners for increasing business value. The following sections illustrate how to execute the framework by describing into details the different steps and actions to be undertaken by IT managers to form strategic inter-firm collaborations.

1 **PREPARE**

Partnership Assessment
- Identify short term gains for both organizations
- Envision long-term potentials for both organizations
- Share and develop a common vision on technological and market trends
- Envision a common destiny based on cooperation

2

Due Diligence (2-4 days)
- Build personal relations and assess cultural fit
- Get ease across a wide level of people at working level
- Evaluate company's substructures, processes and working style
- Identify areas of major interest (i.e., specific technologies or products)

3

Proof of Concept (2-4 weeks)
- Evaluate projects feasibility
- Identify strengths and weaknesses
- Ramp-up working relations
- Build and assess commitment and mutual understanding

4

Non-binding Agreement (if necessary)
- Define clear objectives, clear-cut scope and areas of interest
- Articulate long-term expectations
- Agree upon a inter and intra-firm partnership model
- Determine the types of resources brought by each partner

5 **DEVELOP**

Organizational Design

Governance	Work Structure	Information System
- Strategic, Tactical, Operational level	- Team composition	- Communication channels
- Sponsorship	- Roles & Responsab.	- Points of contact
- Shared Roadmap	- Working methods	- IT Tools
	- Resource planning	

6

Early Win (2-4 months)
- Launch a simple, short-term and clear-cut project
- Look for short-term gains
- Assess commitment, ensure fairness, enhance firms' involvement
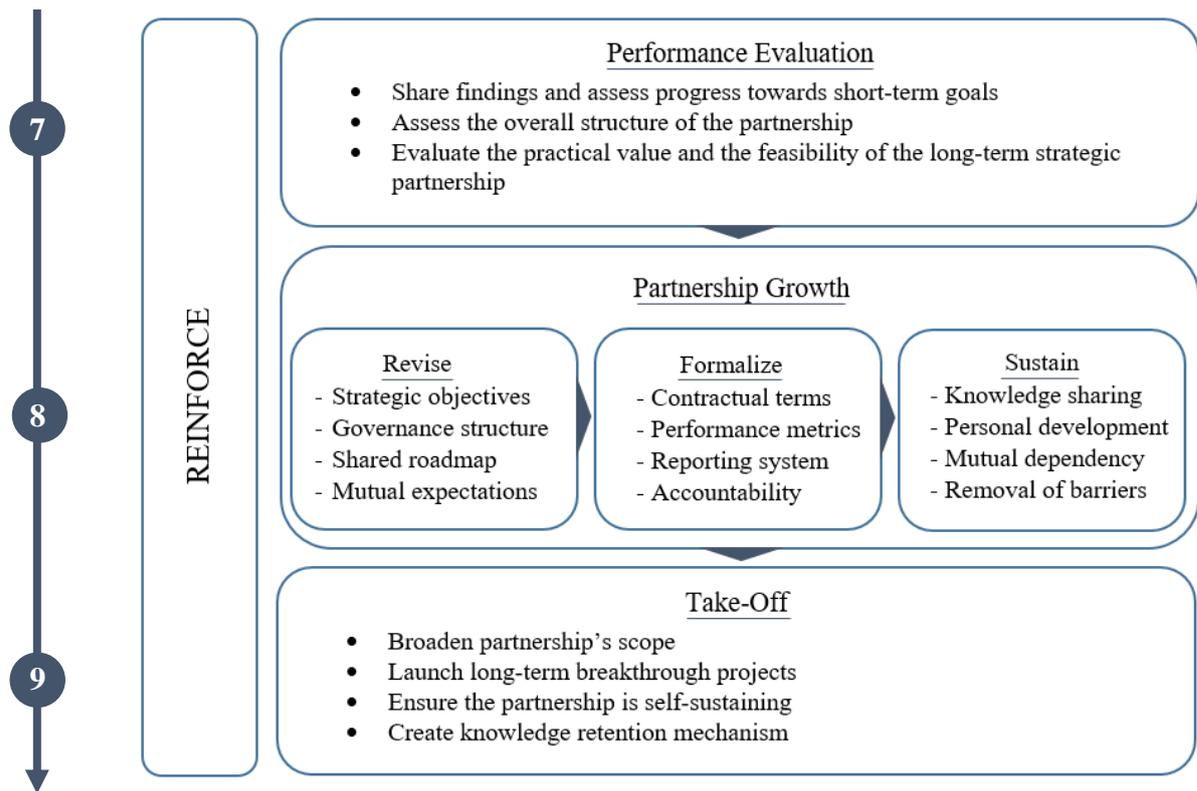- Strengthen inter-firm alignment

Figure 15. The IT Partnership Framework

The IT Partnership Framework displayed in the figure above is composed by three main building blocks: Prepare, Develop and Reinforce. Each phase is further divided in practical steps, for a total of 9 pragmatic stages. Important to note is that the proposed framework does not include the intra-firm steps to be undertaken prior the engagement of the two organizations. Despite their importance, they fall out the scope of this work and hence have not be incorporated in our model. To provide a general direction, each specific firm should first inspect their internal strengths and skill gaps, as well as their position in the value chain, as to build a business-driven strategic plan for inter-firm collaborations.

1. Preparation Phase

The first component of the framework is the Preparation Phase. The goal of this phase is to assess the strategic, cultural and organizational fit between the two organisations and achieve a common agreement on the reasons, needs and objectives of the collaboration. This first phase is further divided into four main steps: Partnership Assessment, Due Diligence, Proof of Concept, and Non-binding Agreement.

1.1 Partnership Assessment

This phase represents the first step to assess the partnership potentials between two organizations. In fact, companies always need to ensure to pick the right partner while initiating strategic collaborations. In this regard, it is important to take into consideration the size of the potential collaborator, analyse the company's history and existing inter-firm relationships (if any), investigate the complexity of the collaboration and evaluate the strategic value that it could bring. Once the dialogue between the firms has been kick-started by two appointed "partnership champions", the two organizations need to identify and evaluate respective short-term gains and long-term potentials. In this regard, important is to define short-term targets, as its achievement represents the first pragmatic assessment of the long-term relationship and a bounding process between the two potential collaborators. Furthermore, during the dialogue it is essential to share and develop a common vision on technological and market trends. A common outlook on how the business and world is going to evolve, as well as on the impact of new technological trends on the long-term horizon represents a necessary condition to support a successful strategic collaboration. The two firms should also jointly envision a common

destiny of cooperation. Cooperation, rather than competition, is a key element to share strategic information and valuable IPs, which are necessary resources for an effective collaboration. Based on these elements, it is possible to establish firms' mutual priorities and readiness. During this phase it also is important to ensure that the reasons for the strategic collaboration are understood and accepted by both parties, along with their expectations and strategic interests.

1.2 Due Diligence

Once a common informal agreement has been reached at the executive level, the two organizations initiate a process to get a sense of the viability of the partnership, the so called "Due Diligence". This phase consists in few days (2-4) in which a limited number of people (10-40) from the two firms spend time in each other's organizations, as to get a feeling of the respective working styles, mentalities and attitudes. This phase is important since it enables to establish relations at personal level, assess the cultural fit, and evaluate company's substructures and processes. Through close firms' contact it is possible to get comfort across a broad level of employees and evaluate the social and organizational contexts. Moreover, potential barriers at working and process level can be immediately identified. The two organizations have also the chance to evaluate and identify first-hand the areas of major potential interests. For instance, specific applications or products not yet available in the market can be scanned and evaluated in the respective innovation environments.

1.3 Proof of Concept

After having got a sense of each other's organizations and identified specific areas of major interests, the partnership champions set up one of more proofs of concept around those technologies or products that have triggered a common interest. This phase should last a limited amount of time (3-4 weeks), since the larger amount of resources and personnel needed in case of longer PoCs might require substantial financial investments, which should not be priorities of discussion yet. Critical in this phase are intra and inter-firm organizational alignment. The first one is mainly important for the organization hosting the testing environment. Specifically, IT managers should ensure a sufficient level of support and resources to carry out the PoCs, as well as dedicated innovation processes and resources. This aspect should be a pre-existing condition. The latter represents the basis for the future collaboration and requires constant attention and investment by managers.

During the PoCs the two organizations are able to evaluate the feasibility of the potential co-development projects, identify the appropriate stakeholders and pinpoint respective strengths and weaknesses at working level. From a social perspective, this phase allows to rump up working relations, build and assess each other's commitment and enhance mutual understanding, critical elements for a truly collaborative partnership. Moreover, during this phase the two companies should also agree on a process for conflict-resolution, due to the inevitability of clashes and disagreements in the prospect of future exchanges. The realization of PoCs enables the two management to assess the realistic expectations for short-term gains, which in turn are required to gain top-management support and financial investments. In fact, this stage represents an important and necessary step for the assessment of the potential value of the relationship.

1.4 Non-binding Agreement (if necessary)

Once feasible pilots are identified and considered for further testing under a common decision, the two organizations can opt for outlining the purpose and terms of the collaboration in a non-binding contract, the so called "Memorandum of Understating". Even if it does not imply a legal agreement, this semi-formal agreement between the two management carries high level of seriousness and respect. The writing of this accord is important to obtain clarity on the agreement on the constituents within the two collaborators. The two organizations should outline high-level objectives, strategic direction, clear-cut scope, long-term expectations and a high-level overview of the resources and skills needed and brought by each partner, based on the outcome and evaluation of the previous phases. Important here is to involve the various stakeholders who are going to take part in the collaboration, as well as acknowledge the top management support. Moreover, during this phase it is vital to reach a common understanding and agreement on the inter and intra-firm partnership model. IT managers should clarify what aspects or organizational functions are most appealing to the collaboration, as well how the engagement of those functions will take place. In this regard, it is important that IT and other functions think and act in the same manner, as to break the silos that typically characterize

large established firms. In fact, an IT strategic collaboration with innovation purposes requires to rethink the way IT and Business interact, by bringing them under a single framework (Figure 16).
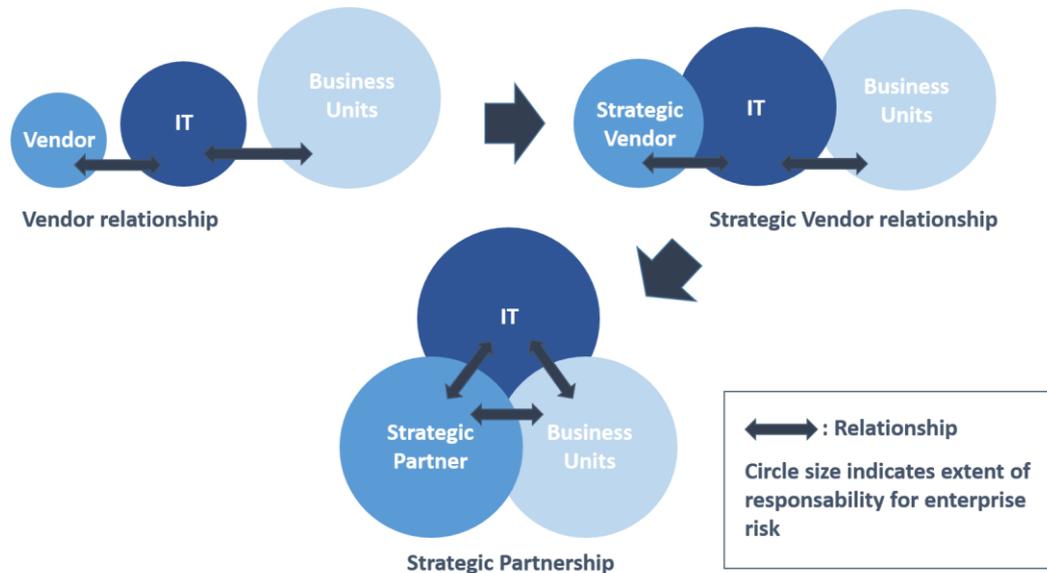

Figure 16. Strategic partnership engagement. Source: (Gartner, 2011)

Worthy of note is that this new mode of collaboration can potentially introduce new business risks too, if handled with old management approaches. The strategic partner is now expected to deliver value directly to the business, rather than driving solely the IT function. In addition, strategic collaborations can no longer be monitored through traditional SLAs and quantitative approaches. On the contrary, a more subjective approach is necessary, which can hardly be translated into quantitative metrics upfront.

To conclude, the above-described agreement is not proposed as a necessary step for the formation of a strategic collaboration. If a sufficient level of trust, transparency and mutual sense of accountability have already been developed throughout the previous phases of this framework, the two companies might not be required to draw up this document. However, its ability to bring clarity, agreement and high-level guidelines on the various facets of the relationship can represent an important advantage to support the formation of the partnership. Moreover, the possibility to share such documentation at every level of the company and across all the employees is an important component for jump-starting the collaboration, tackling misunderstandings and increasing the level of inter and intra-firm acceptance.

2. Development Phase

Once the two organizations agree in principle to initiate a strategic collaboration, the Development Phase begins. The aim of this phase is to lay the foundation of the collaboration by formally structuring the relationship from an organizational perspective. Moreover, this phase requires the two companies to jointly launch and complete a relative small project. An early win is considered essential to gain confidence and fine-tune each other. The Development Phase is further divided into two main steps: Organizational Design and Early Win.

2.1 Organizational Design

This phase is an essential step to give a strategic direction and a formal structure to the collaboration, as well as make sure that the partnership will be supported by an adequate amount of resources, competences and IT systems. The management from the two companies need to address three main areas: Governance, Work Structure and Information Systems.

2.1.1 Governance
In order to successfully govern the collaboration, the two organizations are required to build a three-level joint governance. At the higher level, an *executive sponsorship* is appointed. This level is composed by two

individuals named by the two companies, whose role is to guarantee the overall success of the partnership. The "partnership champions" of Phase 1 have the potential to cover this role and leverage on their image across the two companies. Important is to select managers with great leadership skills and highly capable in liaison management. They are responsible for the progress, assessment and improvement of the overall collaboration, as well as for granting the approval for large transformational projects. In addition, they are required to set the strategic directions and build a shared roadmap, a fundamental element to steer the collaboration. This activity is supported by the second layer of the governance structure, the *relationship management board*. This committee is represented by directors of the different involved functions from each firm and is responsible for the management of project teams. Furthermore, it prioritizes the innovation activities and makes sure that the progresses fall into the scope of the collaboration. The last level is occupied by the *operational management team*, whose members are on the first line for the execution of the innovation projects and the management of day-to-day activities. While establishing the governance, the two firms have to make sure to adequately empower and guarantee decisional autonomy to the executive sponsorship level. When the partners will run into problems – an inevitable phenomena in inter-firm collaborations - a pragmatic attitude and fast decision-making from the executive sponsorship will be fundamental.

2.1.2 Working Structure
Once the governance has been decided, the two organizations need to formally define an appropriate *working structure*. During this process it is vital to clearly define each other's roles and responsibilities, as to avoid misunderstandings and confusion from the start. Cross-functional teams represent the core of the structure and need to continuously communicate with each other, as well as with the partnership governance. At the same time, firms need to agree on the working methodology most adequate for the collaboration, as well as build a preliminary resource planning, where the skills, people, and competencies are listed.

2.1.3 Information System
With the governance and working structure in place, the firms need to establish how the inter and intra-firm communication will take place. The management of the *Information Systems* requires to define how the two companies are connected, through which channels and means of communications, as well as how and what data are shared. In this regard, the firms need to start building a jointly accessible information server, which will be the basis for a collaborative environment and for the monitoring of future projects. Furthermore, the communication needs to move from a traditional hierarchical approach to a direct and cross-functional communication, which should be established across all the parties of the collaboration. This way, it is possible to exchange feedback more efficiently and speed up the day-to-day decision-making. It is also essential to define the frequency of the communication on different levels of the governance, as well as ensure that such communication takes place in a transparent and honest way. Last but not least, the main points of contact between the two organizations need to be clearly pinpointed.

Once these decisions have been taken, the firms are required to codify these arrangements in written forms and make them accessible to all the parties involved at every level of the collaboration. This documents provide the main guidelines of the future projects and are key to bring clarity on how the relationship will actually work.

2.2 Early Win

The second and last part of the Development Phase is the *Early Win*. The main objective of this stage is to further assess and improve the overall fit of the partners and consists on a simple, short-term (2-4 months) and clear-cut project. The project should be the chosen among the successful PoCs from the Preparation Phase and requires a well-define narrow scope. The reason behind the choice to start with a relative small project lies in the fact that too often the "boil the ocean" approach has been indicated as one of the main causes of failing partnerships. Specifically, firms that decide to start a collaboration by immediately launching large and complex innovation projects often end up moving away from the original intention and thus they lose interest. During this phase, the two companies have the opportunity to enhance the cultural fit, identify and address differences, and evaluate each other's actual capabilities. By working in close contact for a long period of time, the management is able to identify key people and critical knowledge, as well as pinpoint additional areas of potential improvements and any risks of legal issues to be addressed later on in the formation process (i.e., IP

rights). During this period, the two partners should also start planning and implementing integration mechanisms, such as informal ceremonies, workshops, and company visits.

Overall, achieving a short-term win should lead to an increase in management and team's motivation, and lay the basis for the contractual and financial negotiation of the partnership.

3. Reinforcing Phase

The last phase of the formation process is called Reinforcing Phase and consists in a series of activities aiming at strengthening and formalize the inter-firm relationship. The output of this phase is an enhanced overall inter-firm alignment and a partnership up to speed. The Reinforcing Phase is further divided into three main steps: Performance Evaluation, Partnership Growth and Take Off.

3.1 Performance Evaluation

Once the short-term project is completed and its outcome is acknowledge, the overall value of the partnership can be evaluated. Prerequisite of this phase is sharing the findings among the partners and assess the overall progress towards the agreed short-term goals. During this stage, the firms have also the opportunity to analyse and assess the overall structure of the partnership – is it working as expected? Is the process too or too less formal? Is the governance appropriate? Are individuals in key positions appropriate for managing the relationship? Are the pre-defined targets achieved? Is there any irresolvable impediment? These are few of the questions that the two organizations are required to address and evaluate. If the outcome of such evaluation is positive, the firms should celebrate the success openly and then move to the next step.

3.2 Partnership Growth

When both parties are satisfied and agreed on the overall positive performance of the collaboration, the focus moves on realigning strategy, structures, and expectations. Moreover, this phase is also the time for contractual negotiations to take place and for larger financial investments to be formally evaluated. The firms have also the opportunity to address impediments, assess the overall trust built during the previous months and identify new investment opportunities. Specifically, the management of each company need to jointly undertake three main activities: Revise, Formalize, and Sustain.

3.2.1 Revise
The first step is to *revise* the overall strategy of the partnership. Based on the previous evaluation, it is now possible to clearly outline realistic and feasible long-term objectives and potentials. The creation of an updated and more detailed technological and business roadmap allows to realign expectations and mutual benefits. Moreover, the governance structure is revisited and adjusted, as to incorporate flexibility and reward individual with attributes such as ownership, innovativeness and leadership. In addition, the two firms are required to outline a strategic and action plan.

3.2.2 Formalize
Once the two firms have agreed on the changes to be made, these and the overall partnership terms can be *formalized* into contractual agreements. Contractual negotiations should be carried out between trusted individuals and at executive sponsorship level, as to ensure transparency, clarity and mutual understanding. Discussion on contractual terms should revolve around business problems rather than product and technological specifications. These agreements are less scope in functionality and more focused in the definition of high-level objectives driving business value. Moreover, as described in the Preparation Phase, the monitoring of the strategic collaboration can no longer rely on strict SLAs, but requires measures of management that are more subjective, high-level and end-to-end. During this phase firms need also to formally define and adopt a reporting system, enabling constant monitoring from both parties. Finally, a system of accountability needs to be put in place, as to judge which individual and teams are contributing and delivering what is expected.

3.2.3 Sustain
With contractual agreements in place, the partnership management needs to *sustain* the long-term relationship by undertaking various actions. First, it needs to create and implement knowledge sharing mechanisms, by

increasing the use of web-based tools and by developing knowledge sharing platform, for instance. In addition, leveraging the knowledge across different team represents another important measure to make sure that all the projects are up to speed and do not suffer from a lack of people or skills. Second, it should promote the personal development by building training programme and provide mentoring to those who are in need. Strategic partnerships pose new management and technical challenges that firms need to address by upgrading human skills, such as project management skills, team working and customer-orientation. Third, the firms need to increase their mutual interdependence by identifying specific knowledge or expertise that potentially complement each other capabilities as to take advantage of individual strengths. Fourth, the social, contractual and organizational barriers need to be constantly evaluated and tackled, as to keep and increase inter-firm alignment.

3.4 Take-Off

The last step of the framework is required to bring up to speed the overall partnership and support the *take-off* of the long-term relationship. The partners can now broaden the scope the collaboration and launch breakthrough long-term projects in new and unexplored areas. Important is to create a self-sustaining partnership that is no longer dependent on the presence of specific figures and points of contact. The management has to define the timeframe of the projects and deliverables, as well as ensure overall contractual and organizational flexibility. Finally, knowledge retention mechanisms need to be put in place, as experienced and key individuals may leave their respective firms in the future.

4. Conclusion

To sum up, the framework will enable organizations to support the formation of strategic IT partnerships and thus increase the overall enterprise value. However, the different phases and steps described in the previous sections require to be reframed and adapted to each specific collaboration, due to the influence that background conditions might have on the formation process. For instance, the order or presence of the phases might change. Therefore, flexibility and case-specific characteristics need to be keep in mind while implementing the proposed framework.