Strategic Objectives affecting the Structure of Service Innovation Partnerships in Technology- and Knowledge-Intensive Sectors

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Abstract

Pursuing and achieving service innovation is of outmost importance for firms operating in technology- and knowledge-intensive sectors. The lack of market consolidation combined with the environment uncertainty – due to both market volatility and technology unpredictability - require the formation of partnerships to produce innovation in ever-shorter service life cycles. Recent research in partnerships has suggested that some governance structures are inherently more likely than others to be associated with high opportunity to cheat, obtain new competence, adjust to changing environment conditions, and finally expand. The present study merged these theoretical insights into a general model of structuring and tested it with data from 99 strategic partnerships, 65 of which aimed at service innovation, in the Greek Information and Communication Technology market. The empirical findings generally supported the proposed hypotheses, however, suggesting the need for a greater focus on transaction costs and real options arguments in the study of service innovation partnerships.

Keywords: governance structure; strategic objective; service innovation; partnership; high-technology; knowledge-intensive sectors; transaction costs; real options; Greek market

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1. Introduction

Cooperative agreements, such as joint marketing or value-added reseller agreements have been traditionally used by firms in order to improve their position in the current market or enter new markets. Strategic objectives of firms entering such partnerships were mostly related with expansion of their current services into new markets rather than diversification and innovation development. Since the mid 1980s, firms have increasingly formed strategic partnerships aiming at technological learning and knowledge creation. Such partnerships are handled as an effective

organizational form allowing firms to combine and integrate complementary knowledge and capabilities from a diversity of actors (Gilsing, Lemmens, and Duysters, 2007).

Gadrey, Gallouj, and Weinstein (1995, p. 6) provide the following definition; "to produce a service […] is to place a bundle of capabilities and competences (human, technological, organisational) at the disposal of a client and to organise a solution, which may be given to varying degrees of precision". This definition points out the modular nature of services, thus indicating their ability to be associated with a number of different people, technologies, and organizations. Gallouj and Weinstein (1997) define six innovation models that could be used for defining service innovation; a) radical innovation, denoting the creation of a totally new service, b) improvement innovation, consisting simply of improving certain features of the old service, c) incremental innovation, involving the addition of one or two new characteristics to a certain type of service, d) ad-hoc innovation, defined in general terms as the interactive (social) construction of a solution to a particular problem posed by a given client, e) re-combinative or architectural innovation, involving the creation of a new service by combining the characteristics of two or more existing services provided by the same or different providers, and f) formalization innovation, consisting of putting the service characteristics 'into order', specifying them, making them concrete, giving them a shape.

Of special interest to this paper is the re-combinative form of innovation. This mode of innovation is frequent in services but also in high-tech markets, such as biotechnology and micro-electronics (Gallouj and Weinstein, 1997). Innovation of this kind involves bundling diverse elements (i.e. resources, knowledge, technologies) into one service system. The various service elements are usually provided by a network of collaborative firms that cooperate for exploiting the complementarities of their resources and capabilities to create innovative service offerings. Doing so, they alo save costs and risks of developing a new service on their own. For that reason, the re-combinative form of innovation is also known as distributed innovation.

While distributed innovation offers exciting possibilities for a firm to capitalize on the creativity of its partners, the management of distributed innovation requires firms to re-examine the mechanisms they use to govern innovation-targeted partnerships (Sawhney and Prandelli, 2000). At the one extreme, a firm can choose a quasi-hierarchy structure by establishing a new entity (joint venture) or partially integrating the partner through a minority investment agreement. At the other extreme, a firm can choose to contract with the partners in order to settle their responsibilities and contribution to the partnership. Since these alternative forms of collaboration provide varied degrees of control and interdependence and require different resource commitments, choosing the appropriate structural mode constitutes a critical firm decision. The decision on governance structure becomes even more salient for firms operating in service markets where technology constitutes a challenge to increase effectiveness (cost minimization, quality improvement) or achieve diversification (innovation development). This is because the technology possesses a key strategic role as enabler of service innovation by firms (Uden and Naaranoja, 2009).

Research on governance structure of partnerships has mainly identified a number of firm- and environment-specific determinants, such as firm size and competitive position, location of partners, environment uncertainty and competition intensity (e.g. Chen and Chen, 2003; Pateli, 2009; Ring and Van de Ven, 1992; Teng and Das, 2008). Studies on strategic objectives of partnerships have mostly focused on identifying their impact on partnership formation rather than on governance (e.g. Hemphill and Vonortas, 2003). While it is generally accepted that strategic motivation is important, few researchers have identified that its importance can vary with the contractual form of the partnership. Recently, Su (2007) paid attention to the role that strategic goals may have on organizational structures for service innovation. Nevertheless, that research had focused on proposing a service-oriented organisational ontology and a process model for service strategy analysis and design, rather than providing empirical data on the above mentioned relationship. Another stream of research has been oriented towards identifying the impact of joint partnership objectives on the governance choice. In that case, strategic objectives are conceptualized as

partnership's ultimate purpose, which most commonly includes R&D or joint marketing (Pangarkar and Klein, 2001; Teng and Das, 2008).

This paper elaborates on the impact of firms' individual objectives on the structural mode (organizational form) of strategic partnerships aiming at service innovation, under the analysis of a three-perspective theoretical framework (Transaction Cost Economics, Resource- and Knowledge-based View of the firm, Real Options), which embodies considerations of resource acquisition, opportunism minimization, flexibility and commitment to innovation and growth. The proposed strategic objectives that are hereinafter analysed prescribe alternative considerations that motivate not only the formation but mainly the structural mode of service innovation partnerships.

The next section sets the theoretical framework of this research and builds the hypotheses to be tested by the empirical research. In Section 3, the empirical settings and the research methodology followed for sampling and analysis are explained. Section 4 presents the empirical findings, while Section 5 discusses their significance for the existing empirical and theoretical research. In the final section, we identify the main contribution and limitations of this research, and provide ideas for further research.

2. Defining Strategic Objectives and their Impact on Structure

Most studies in the governance literature have been based on the dichotomy of equity versus non-equity partnerships (Gulati, 1995; Narula and Hagedoorn, 1999; Osborn and Baughn, 1990; Pangarkar and Klein, 2001; Pisano, 1989). Whereas equity partnerships include joint ventures and minority equity investment, non-equity partnerships refer to all other contractual arrangements that do not involve equity exchange. Equity partnerships are conceived as quasi-hierarchies, since they rely on hierarchical governance mechanisms, while non-equity partnerships are conceived as quasi-markets, since they rely on arm's-length market transactions (Osborn and Baughn, 1990).

Three principal theoretical perspectives, namely Transaction Cost Economics (TCE), Resource-based and Knowledge-based View of the Firm (RBV/KBV), and Real Options (RO) have been thoroughly applied to deal with organizational integration and governance issues (Chen and Chen, 2003; Leiblein, 2003; Pateli, 2009). Each of them provides a different perspective on conditions that motivate or influence the formation of strategic partnerships, as well as factors that affect decisions on organizational form. This paper argues in favour of integrating a set of antecedents and propositions, sourced from the aforementioned theoretical perspectives, with the ultimate purpose of identifying the individual impact of diverse strategic objectives on service innovation partnerships' structure.

2.1 The Transaction Cost Economics perspective on Strategic Objectives

The prime considerations of Transaction Costs analysis are the assumptions of self-interest and bounded rationality of parties involved in cooperative agreements (Williamson, 1975). While the assumption of self-interest raises the issue of behavioural opportunism, the assumption of bounded rationality raises the difficulty for partners to write complete contracts where all details of the transactions will be explicitly and clearly stated, so that misunderstandings or misinterpretations are avoided. Under TCE, the structural mode of partnerships is dependent on two critical parameters; the type and degree of asset specificity involved in supplying the good or service of the partnership, and the uncertainty to which transactions are subject (Williamson, 1991).

Asset specificity can take a variety of forms, such as ownership of a rare resource, development of an advanced competence, a special privilege, or a patent. The higher the asset specificity, the higher is the need for, and thus the cost of, partnership coordination. Thus, high asset specificity requires more complex institutional forms of partnership, where common administrative systems are set to govern the partner dependencies and appropriate resolution

mechanisms are employed to handle possible disputes and contracting hazards (Williamson, 1991). Service innovation-targeted partnerships involve high levels of asset specificity, required to produce the re-combinative mode of service innovation. Thus, benefiting from high asset specificity cannot be considered as critical objective affecting the structure of service partnerships in the context examined in this paper.

Uncertainty about sources of opportunism is an important variable in transaction cost models of governance. Under conditions of no uncertainty, partners are able to rely on relatively simple market-based cooperative agreements to manage their transactions. However, as uncertainty about partners' opportunistic behaviour increases, it may be necessary for parties to adopt equity forms of partnerships, such as minority investments and joint ventures (Barney and Lee, 1998). Cases of opportunism in a transaction can be discovered over time, and several remedies can be developed through the appropriate control and conflict resolution mechanisms involved in quasi-hierarchy partnerships. In general, a high level of ex ante uncertainty leads to the adoption of progressively more hierarchical governance structures (Williamson, 1975; 1985).

Non-Equity	***Equity***
Minimize the Threat of Opportunism	---------->

Hence, we propose the following hypotheses.

H1a: The objective of "minimizing the threat of opportunism" can discriminate equity from non-equity partnerships, regardless of having an innovation goal.

H1b: The objective of "minimizing the threat of opportunism" can discriminate equity from non-equity partnerships when they aim at service innovation.

2.2 The Resource- and Knowledge-based View on Strategic Objectives

From an organizational perspective, the available resources and capabilities influence firms' ability and willingness to invest in partnerships (Nelson, 1991). In contrast to the transaction cost logic, which emphasizes on allying with the purpose of minimizing transaction and production costs, the resource-based rationale emphasizes value maximization of a partnership for a firm through pooling and utilizing valuable resources and capabilities from its partners (Das and Teng, 2000). RBV considers partnerships as strategies used to access partner resources for the purpose of concentrating otherwise unavailable competitive advantages and values to the firm. Thus, the overall rationale for entering into a strategic partnership is simple; to aggregate, share or exchange valuable resources with other firms, when these resources cannot be efficiently obtained through market exchanges or mergers and acquisitions (Das and Teng, 2000).

In knowledge-intensive service industries, equity partnerships are preferred for the safe exchange of valuable knowledge, since contract-based partnerships do not offer sufficient protection against opportunistic behaviour and unintended transfer of resources (Das and Teng, 2000). According to Oxley and Sampson (2004), where the costs of knowledge leakage are deemed to be particularly high, a firm may choose between narrowing down the partnership scope to limit exposure and opting for a protective (equity-based) governance structure to control partner opportunism. Especially in strategic technology partnerships, where partners' unique capabilities involve tacit knowledge, inter-firm knowledge transfer may be limited to only the codified information necessary to coordinate otherwise separable activities that draw on different knowledge domains (Hemphill and Vonortas, 2003). Based on argumentation of Resource- and Knowledge-based Views, quasi-hierarchy partnerships (i.e. joint ventures) are encouraged under two conditions: 1) partners desire to acquire each other's knowledge-based resources, or 2) one firm wishes to maintain an organizational capability, while benefiting from its partners' current knowledge or cost advantage.

Non-Equity	***Equity***
Enhance Resources and Competence ---------->	

Thus, the following hypotheses are formulated.

H2a: The objective of "enhancing resources and competence" can discriminate equity from non-equity partnerships, regardless of having an innovation goal.

H2b: The objective of "enhancing resources and competence" can discriminate equity from non-equity partnerships when they aim at service innovation.

2.3 The Real Options perspective on Strategic Objectives

The Real Options theory has emerged as a compelling approach towards investing strategic decisions under conditions of uncertainty, such as decisions regarding investment in R&D and innovation-oriented activities, establishment of joint ventures (Kogut, 1991) and uptake of other entrepreneurial initiatives (McGrath, 1997). In contrast to the transaction costs logic, where uncertainty is perceived in terms of partners' opportunistic behaviour, real options identify technology evolution, market volatility and competition unpredictability as the primary sources of uncertainty in cooperative agreements. The real options theory approaches the environment uncertainty and its impact on the governance mode of partnerships through the definition of two value options. Each of these value options describe a different way in which firms may lay claim to future rent generating opportunities through current investments.

The first and simplest means through which organizational governance decisions may create value is through "the option to defer" investment, also called as the "option of waiting". This option refers to cases where the critical objective of firms, when making governance structure choices under conditions of uncertainty, is the maintenance of their flexibility. Flexibility is desired in cases where firms wish to avoid the risk of committing irreversible resources to a partnership, since the expected future value of this investment remains uncertain. In these situations, there is more value for firms from delaying or deferring the investment to a quasi-hierarchy partnership. The value associated with the "option to defer" is greater when uncertainty about the transaction environment is high and the estimated cash flows lost due to postponing the investment are relatively small. Thus, under conditions of high uncertainty about the viability and the success of the investment, service firms are more liable to opt for less hierarchical governance structures to assure flexibility.

Non-Equity	***Equity***
<---------- *Maximize Flexibility*	

Thus, we propose the following set of hypotheses.

H3a: The objective of "maximizing flexibility" can discriminate equity from non-equity partnerships, regardless of having an innovation goal.

H3b: The objective of "maximizing flexibility" can discriminate equity from non-equity partnerships, when they aim at service innovation.

The second means through which real options analysis guides governance decisions is through the "growth option", also referred to as "call option". When firms have a clear strategic goal of growth, and do not address partnerships as a survival or competition means, then they have greater interest in high investment through which give them the right to further expand or innovate. Kogut (1991) provides a set of theoretical arguments and empirical evidence that firms invest in joint ventures to obtain growth options and sequentially expand into new and emerging markets.

Non-Equity	***Equity***
	Maximize Growth Opportunities ---------->

Hence, the following hypotheses are proposed.

H4a: The objective of "maximizing growth opportunities" can discriminate equity from non-equity partnerships, regardless of having an innovation goal.

H4b: The objective of "maximizing growth opportunities" can discriminate equity from non-equity partnerships, when they aim at service innovation.

2.4 Integration of Theoretical Perspectives on Strategic Objectives

The following table summarizes the diverse individual objectives of firms when entering strategic partnerships from the various theoretical perspectives examined above.

Table 1 Theoretical Perspectives on Strategic Objectives

Theoretical Perspectives	**Strategic Objectives**
Transaction Cost Economics	Minimize the Threat of Opportunism (OPPORTUNISM)
Resource- & Knowledge-based View of the Firm	Enhance Resources and Competence (COMPETENCE)
Real Options Theory	Maximize Flexibility (FLEXIBILITY)
	Maximize Growth (GROWTH)

The above analysis has revealed that each theoretical perspective adopts overly simplistic characterizations of the firms' concerns in making structuring decisions. Transaction Cost Economics, the most commonly applied theory for explaining the structural issues of strategic partnerships, addresses the cost aspects of strategic partnerships and deals with the balance between partners' protection and partnership's efficiency. Nevertheless, factors that relate to value realized under conditions of uncertainty have been rather neglected by TCE. Such aspects are addressed by the Resource and Knowledge-based View of the firm in terms of competitive advantage, as well as by the more recently applied Real Options theory in terms of gaining the option to future growth. This last perspective is especially applicable in examining decisions made under conditions of high uncertainty, which resemble those of service innovation partnerships in high-tech sectors.

In the strategic management literature, little effort has been put to linking insights from Real Options with insights from Transaction Cost Economics and Resource- and Knowledge-based View of the firm in order to make an innovation-related strategic decision. In this paper, we argue that, only by recognizing and taking into account the diversity of the firms' objectives when forming innovation-targeted partnerships, it will be possible to explain the way firms opt for the structuring forms of service innovation partnerships.

3. Research Settings and Methodology

3.1 Sampling

Data used for the empirical validation of the model was obtained from service innovation partnerships formed in the Greek Information and Communications Technology (ICT) market, although many of the firms participating in these partnerships were multinational. After that, our population includes both domestic but also multi-national partnerships, in which one at least partner

is founded in Greece. The partner perspective for the partnership was chosen as the unit of analysis for our study. The participating firms were sourced from the Federation of Hellenic Information Technology and Communications Enterprises (SEPE), a non-profit organisation established in 1995. Till the time when the surey conducted, the federation had approximately 308 members, which they held more than 95% of the country's turnover in the Information Technology and Telecommunication Industry. At the first phase, all firms were contacted via telephone to identify if they were of interest to our research, which means if they have formed a strategic partnership since 2000. From the initial contact, approximately 148 firms having formed a partnership from 2000 till 2009 were of interest to our research context. One third of them either declared to provide the data required or never filled in the questionnaire that was posted to them. As result, we finally collected 103 questionnaires, out of which 99 were valid, and thus were retained for further analysis.

The questionnaire used to collect our data included a number of questions, classified into two sections. Section A included questions on the strategic alliance, such as year of formation, goal of alliance and organizational form, while Section B comprised questions on the respondent firm's identity, such as firm size and sector, and objectives. The questionnaire was designed with the purpose of identifying the prime antecedents of governance choice in ICT alliances. Following, we present only these constructs and findings that comply with the objectives of this research stream; identifying the relationship of firms' strategic objectives with the organizational form of the innovation alliances in which they participate.

3.2 Measurement and Statistic Analysis

In our empirical study, the organizational form served as dependent variable, while the independent variables included the four diverse strategic objectives analysed in the above section. Moreover, as control variable, we used a dummy variable identifying the intention of firms to produce or not service innovation via the specific partnership.

Strategic Objective (OBJECTIVE): This was coded as a multiple response variable, and firms were asked to:

> "*Choose from the list your strategic objectives in entering a business ecosystem or forming an partnership:*
> *1) Formulating technical standards,*
> *2) Expanding into new markets,*
> *3) Joining forces to compete opportunism of other players,*
> *4) Obtaining new competence*".

The phrasing of objectives was selected under the concern of matching the special needs of the ICT industry. Specifically, standardization, denoted from the first option of the above list, comes in opposition to flexibility pursued through open protocols in the ICT industry. After that, it was easier to catch information on firm's objective towards standardization, thus creating a reverse to the initial FLEXIBILITY objective. The formulation of the last three objectives is more self-explanatory. The second option refers to the GROWTH objective; the third option denotes the OPPORTUNISM objective; and the last option stands for the COMPETENCE objective.

Respondents were allowed to choose either one or more. After that, each item of the variable was coded as 1, if the respective objective was selected and 0 otherwise.

Organizational Form (ORG_FORM): Organizational Form was coded as 1, if the partnership was equity-based (joint venture, minority investment), and 0 otherwise (contract-based agreement).

Innovation Goal (INNOVATION): The questionnaire also included an open question, in which firms freely filled in the primary goal for which they entered a strategic partnership. Innovation Goal was finally coded as 1, if the respondents referred to either sharing costs and risks or combining complementary resources and skills to produce new services, and 0 otherwise. The coding of this

variable has been based on: a) the definition of the re-combinative form of service innovation, and b) the Narula and Hagedoorn's (1996) research arguing that firms enter into innovation alliances with the purpose either to share costs and risks of innovation development or to join complementary resources that otherwise could not access.

Since all the variables were coded as binary variables (0, 1), the cross-tabulation method was applied to identify the type of relationship that exists between the firms' strategic objectives and the choice of the organizational form that strategic partnerships adopt. The x^2 measure was selected as the most applicable measure in providing statistical strong correlations, and thus leading to either accepting or rejecting the hypotheses of Section 2.

4. Research Findings

The descriptive statistics indicated that, out of the total number of partnerships examined, approximately 74,7 percent of them concerned non-equity partnerships, while only 25,3 percent of them concerned equity partnerships (joint ventures and minority investments).

Table 2 shows cross-tabulations of the two groups (equity vs. non-equity) by firms' strategic objectives. Considering the two groups, Table 2 shows that GROWTH and OPPORTUNISM are the most commonly met strategic objectives in forming both equity and non-equity partnerships. More specifically, 67,3% of firms participating in non-equity partnerships (Group 1) has selected the GROWTH objective, while 72,7% of firms participating in equity partnerships (Group 2) has selected this same objective. Also, 55,1% of firms participating in Group 1 has selected the OPPORTUNISM objective, while 68,2% of firms participating in Group 2 has selected this same objective. It seems that the GROWTH objective is attributed even more importance than the OPPORTUNISM objective in both groups. Applying cross-tabulation, we wished to measure whether this difference in percentage is statistical significant to explain dichotomies between Group 1 and Group 2.

As it is indicated by X^2 measures provided in Table 2, the dependent variable ORG_FORM is correlated with the OPPORTUNISM and GROWTH objectives, but independent from the rest two objectives. Specifically, the relationship between ORG_FORM and OPPORTUNISM seems to be even more significant than the one existing between ORG_FORM and GROWTH.

Table 2 Cross-tabulation of Equity vs. Non-Equity Partnerships by Strategic Objective

Strategic Objective	**Percentages**	**Group 1 (Non-Equity)**	**Group 2 (Equity)**
FLEXIBILITY (reverse coded)	% within objectives	66,7%	33,3%
	% within governance structures	24,5%	27,3%
Chi-Square (1 d.f)	0,761 (0.383)		
GROWTH	% within objectives	67,3%	32,7%
	% within governance structures	67,3%	72,7%
Chi-Square (1 d.f)	2,815 (0.093)*		
OPPORTUNISM	% within objectives	64,3%	35,7%
	% within governance structures	55,1%	68,2%
Chi-Square (1 d.f)	4,230 (0.040)**		
COMPETENCE	% within objectives	66,7%	33,3%
	% within governance structures	28,6%	31,8%

Chi-Square (1 d.f)	0,922 (0.337)

**p<0,05, *p<0,10

Out of the total number of cases, approximately 65% has stated as primary goal of their partnership the development of service innovation.

Table 3 shows cross-tabulations of the two groups (equity vs. non-equity) by strategic objective, and layered by innovation goal. The two new groups that are shaped are; Group 3 including firms entering non-equity partnerships that aimed at service innovation and Group 4 including firms entering equity partnerships that aimed at service innovation. Considering the two groups, Table 3 shows that GROWTH and OPPORTUNISM remain the most commonly met strategic objectives in Groups 3 and 4. More specifically, 72% of firms participating Group 3 has selected the GROWTH objective, while 71,4% of firms participating in Group 4 has selected this objective. Moreover, 64% of firms participating Group 3 has selected the OPPORTUNISM objective, while 71,4% of firms participating in Group 4 has selected this objective. While the two objectives are attributed the same importance by Group 4, the OPPORTUNISM objective is more frequently met than the GROWTH objective for firms belonging in Group 3.

As it is indicated by X^2 measures provided in Table 3, the relationship between the dependent variable ORG_FORM and the OPPORTUNISM and GROWTH objectives remain significant, in the case that partnerships target service innovation. Again, the relationship between ORG_FORM and OPPORTUNISM seems to be even more significant than the one existing between ORG_FORM and GROWTH. However, Table 3 also reveals another strong relationship, that of the ORG_FORM variable with the FLEXIBILITY objective. This relationship was proven non-significant, when the control variable of service innovation goal was not included in the model.

Table 3 Cross-tabulation of Equity vs. Non-Equity Innovation Partnerships by Strategic Objective

Strategic Objective	Percentages	Group 3 (Innovation & Non-Equity)	Group 4 (Innovation & Equity)
FLEXIBILITY (reverse coded)	% within objectives	53,8%	46,2%
	% within governance structures	28,0%	42,9%
Chi-Square (1 d.f)	3,725 (0,054)*		
GROWTH	% within objectives	64,3%	35,7%
	% within governance structures	72,0%	71,4%
Chi-Square (1 d.f)	2,832 (0,092)*		
OPPORTUNISM	% within objectives	61,5%	38,5%
	% within governance structures	64,0%	71,4%
Chi-Square (1 d.f)	3,988 (0,046)**		
COMPETENCE	% within objectives	60%	40%
	% within governance structures	36%	42,9%
Chi-Square (1 d.f)	2,216 (0,137)		

**p<0,05, *p<0,10

5. Discussion

This study aimed at investigating the impact of certain strategic objectives, as they were identified in the literature, on the organizational form of strategic partnerships that aimed at service

innovation. More specifically, its four hypotheses refer to four distinct objectives, expressing three different theoretical perspectives on firms' primary intentions in forming partnerships. While previous research has examined a set of governance structure determinants (Hagedoorn and Narula, 1996; Leiblein, 2003; Oxley and Sampson, 2004; Pangarkar and Klein, 2001; Santoro and McGill, 2005), this research investigates predictors of the governance choice for partnerships formed under conditions of increased competition intensity and demand uncertainty. Our results provide support for Hypotheses 1a-b, 3b and 4a-b, thus indicating that the objectives of "minimizing the threat of partners' opportunism", "maximizing flexibility" and "maximizing growth" are significantly associated with the choice of the organizational form of service-innovation partnerships in technology- and knowledge-intensive sectors.

Consistent with the Transaction Cost Economics theory, Hypothesis 1a claims that the frequency in which the objective of "minimizing the threat of opportunism" is met in equity and non-equity partnerships is significantly differentiated. In other words, the above objective may discriminate the equity versus non-equity partnership, with equity partnerships being preferred when firms join forces with partners to compete. As Hypothesis 1b assumed, this distinction was valid even when the innovation goal was taken into consideration. Thus, partnerships aiming at service innovation are also distinguished between equity and non-equity with respect to the OPPORTUNISM objective. However, the small difference in the values of chi-square measures (4,230 and 3,988) of Groups 2 and 4 reveal that the discrimination caused persists in service innovation partnerships within the same degree of importance. Since risk of opportunism is inherent in technology- and knowledge-intensive industries, it is expected to be presents, regardless of the existence of a joint service innovation goal between partners.

Contrary to our expectations, supported by the Resource- and the Knowledge-based View, Hypothesis 2a, claiming that the frequency in which the objective of "obtaining and sustaining competitive advantage" is met in equity and non-equity partnerships is significantly differentiated, is not finally accepted. Thus, the above objective does not significantly discriminate equity from non-equity partnerships. Even when the innovation goal is taken into consideration, Hypothesis 2b is rejected, as is indicated by the respective chi-square value of Table 3. Thus, partnerships aiming at service innovation are not distinguished between equity and non-equity with respect to the "obtaining and sustaining competitive advantage" objective. While traditional strategies involved decisions that aim at acquisition of valuable resources and capabilities and cost-minimization, innovation-targeted strategies require firms to take decisions that primarily aim at optimizing risk management, residing in technology- and knowledge-intensive industries (Hertog, 2000; Ojanen, Xin, and Chai, 2009) The re-combinative form of innovation inherently implies combination of partners' diverse resources and capabilities, and thus firms' concern is for joining complementary competence rather than for increasing their own.

Moreover, against our expectations, provided by the Real Option theory, Hypothesis 3a, claiming that the frequency in which the objective of "maximizing flexibility" is met in equity and non-equity partnerships is significantly differentiated, is not finally accepted. In other words, the above objective does not significantly discriminate equity from non-equity partnerships. However, when the innovation goal is taken into consideration, Hypothesis 3b is accepted, as illustrated in Table 3. Thus, partnerships aiming at service innovation are distinguished between equity and non-equity with respect to the "maximizing flexibility" objective. Strategic decision-making is difficult in technology-based service industries, not only because change is fast and sudden, but also because it is difficult to predict the significance of a change as it is occurring. Under such conditions, firms are required to be responsive to changing market conditions, and thus make strategic options that favour flexibility. Flexibility is the capacity to change and to adapt to a challenging environment. Previous research has indicated that flexibility facilitates innovation (Georgsdottir and Getz, 2004),

and thus can justify the hereinafter proven relationship between the FLEXIBILITY objective and the ORG_FORM of service innovation alliances.

Consistent with the Real Options theory, Hypothesis 4a claims that the frequency in which the objective of "maximizing growth opportunities" is met in equity and non-equity partnerships is significantly differentiated. In other words, the above objective may discriminate the equity from the non-equity partnerships with the former ones being preferred when firms ally in order to expand into new markets, and thus maximize the growth opportunities. As Hypothesis 4b assumed, this distinction was even identified when the partnerships aimed at service innovation development. However, the lack of any difference in the values of chi-square tests (both equal to 2,832) of Groups 2 and 4 reveal that the discrimination caused persists in service innovation partnerships within the same degree of importance. After that, it seems that firms in technology- and knowledge-intensive industries pursue growth, in terms of expanding their current services into new markets (no innovation goal included) or enhancing their market segments by offering new services (an innovation goal is denoted).

6. Concluding Remarks

This paper describes a research effort to combine the literature of TCE, RBV/KBV and RO in order to define the parameters that affect the governance structure of partnerships aiming at service innovation. The prime features of the technology- and knowledge-intensive service industries – such as uncertainty with regards to the competitors' movements and the market's response, competition intensity and continuous technological evolution - have affected research investigating the relationship between firms' strategic objectives and the governance choice of their partnerships.

Existing theoretical investigations have resulted with a set of primary firm objectives driving partnership decisions (e.g. formation, governance, management). The issue examined in this paper involves the governance, and more specifically the selection of the organization form under which partnerships are structured in order to meet their strategic objectives. Our literature research has resulted with four groups of hypotheses, described hereinafter as the baseline of our research model, being empirically tested. Our empirical results have provided support for the power of "maximizing growth opportunities", "maximizing flexibility" and "minimizing the threat of opportunism" in discriminating equity from non-equity partnerships, when they serve a service innovation goal.

The findings of this empirical research have provided support for the respective hypotheses (H1a-b, H3b, H4a-b) that correspond to these objectives, suggesting the need for a greater focus on transaction costs and real options perspectives in the study of service innovation partnerships. The existence of an overall innovation goal may surpass or even cover the individual firm's need for obtaining and sustaining competitive advantage, as the RBV advocates. Instead, the service innovation partnerships may incur high risks of opportunism as well as increased need for either flexibility or growth. As this research has revealed, flexibility becomes of paramount importance only in service innovation partnerships, while the rest two objectives affect partnerships' governance structure regardless of the existence of innovation goal. Thus, the perspectives of TCE and RO seem to be more appropriate in explaining the structural choice of service innovation partnerships.

While existing research in the field of strategic management has identified that firms form partnerships in order to achieve strategic objectives that are individually unachievable (Cravens, Shipp, and Cravens, 1993), there is limited empirical research on identifying the power of strategic objectives in differentiating equity from non-equity partnerships. Thus, the prime contribution of this research rests on providing empirical data on the impact of firms' individual objectives on the structural mode (organizational form) of strategic partnerships aiming at service innovation.

Our findings are subject to the following limitations, which point to directions for future research. Our empirical research has provided support for the objectives that were most commonly met within the sample. Future empirical research is designed to collect an even greater and more representative sample of partnerships, thus closing the gap that exists for partnerships aiming at "maximizing flexibility" and "increasing competence". In the same vein, future sample should increase the percentage of service innovation partnerships within the overall sample of partnerships in the ICT industry.

Second, the empirical research has sourced data from partnerships formed within the Greek Information and Telecommunications Industry. Future research is planned to extend the scope of this empirical research to other type of partnerships by following two directions; a) expand the research sample in other technology- and knowledge-intensive service sectors, such as finance and health services, and control for the impact of the sector variable, b) repeating the same survey in the ICT industry of other countries and control for the impact of the country variable.

Strategic objectives of partner firms are likely to change in the operation stage. Often, partner firms enter partnerships with the objective of minimizing their partners' opportunism. When this objective is mostly accomplished, partner firms may demand a renegotiation of the deal. In such a situation, they tend to have quite different objectives, such as using the partnership to expand into new service sectors. After that, it would be of worthwhile to study the pattern of changing objectives and how this may differentiate the structure of partnerships that evolve over time.

Finally, partnerships' performance is often measured as the degree to which both partners achieve their individual strategic objectives. This research was limited to measure the impact of one (chosen to be the principal one) of the partners' strategic objectives on the alliance's structure. Future research is oriented towards identifying the relationship between the achievement of the firms' above strategic objectives and the partnership's estimated performance. Research interest is increased when taking into consideration the diversity of firms' strategic objectives as well as their diverse estimations on their partnership's performance.

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